

# FINNISH AVIATION LANDSCAPE

Global Innovation Partnership Program (GIPP)  
Sustainable Manufacturing Finland Program

BUSINESS  
FINLAND

 Confederation of  
Finnish Industries

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Updated 15 April 2021

Picture: PES-Architects

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# WHY FINLAND?



# FINLAND EXCELS IN GLOBAL RANKINGS

## THE BEST

Business environment in the world<sub>1</sub>

## THE BEST

Primary education in the world<sub>2</sub>

## THE BEST

Overall quality of institutions<sub>3</sub>

## THE BEST

Digital competitiveness in the EU<sub>4</sub>

## THE MOST

FDI Projects in the Nordic countries<sub>5</sub>

## THE HAPPIEST

Country in the world<sub>6</sub>

## THE MOST

Stable country in the world<sub>7</sub>

## THE BEST

In providing future skills education for the youth<sub>8</sub>

## THE SECOND

Best skilled workforce in the world<sub>9</sub>

## THE THIRD

Most innovative country in the world<sub>9</sub>

1 Global Innovation Index 2019

2 World Economic Forum, The Global Competitiveness Report 2017-2018

3 World Economic Forum, Global Competitiveness Report 2019

4 European Commission Desi Index 2019

5 EY Nordic Attractiveness Survey 2019

6 UN World Happiness Report 2020

7 The Fund for Peace, Fragile States Index 2019

8 The Economist, Worldwide educating for the future Index 2019

9 Bloomberg Innovation Index 2019

# SMART SUSTAINABLE MANUFACTURING: DRIVEN BY INNOVATION AND EXPERIENCE



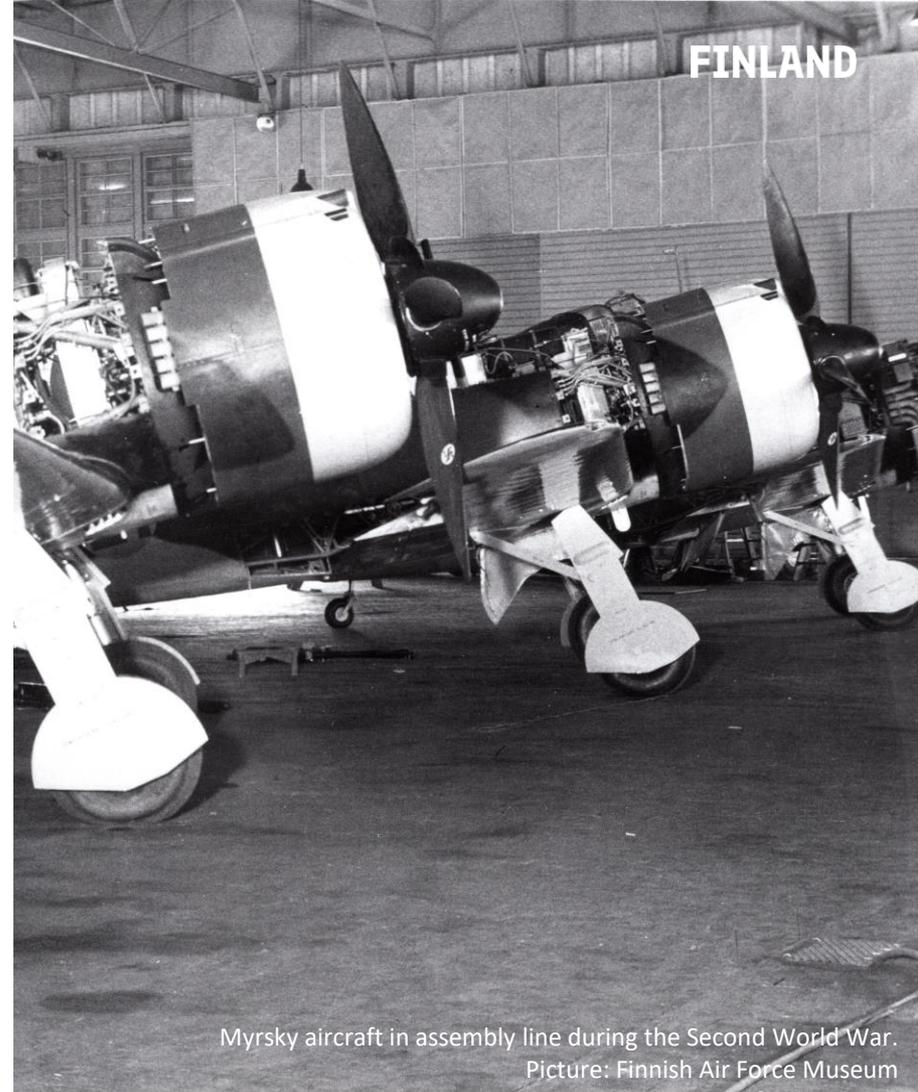
Finland's strengths in the manufacturing sector are sustainability, innovation and digitalization. Known for its highly energy-efficient process industries and machinery production, Finland is home to world-class process engineering, automotive, maritime and intelligent vehicle production. International companies have found Finland an excellent location for demanding, highly automated manufacturing and R&D. Finland's active industry ecosystems support co-creation, innovation, fast piloting and agile contract manufacturing.

# ROOTS OF THE FINNISH AEROSPACE INDUSTRY

The aircraft industry in Finland started to develop right after Finland gained independence in 1917, primarily for the purpose of building a national air defense fleet with minimal use of foreign currency. The Finnish Air Force Aircraft Factory was founded in 1921 and a small ecosystem of subcontractors emerged to support the factory. During the peak of its activities during the war, the aircraft factory produced approximately 600 new aircrafts and repaired about 1 500 damaged aircrafts.

1952 the factory became a part of Valmet Group ,with a new name Valmet Aircraft Factory. It was a part of the Valmet Group until 1990s, when it was detached and merged with other government owned companies in the defense industry and privatized. The company was named [Patria](#). Today Patria is owned jointly by the Finnish government and Kongsberg Defense & Aerospace 50.1% and 49.9%, respectively.

After the mid-1990s the Finnish aviation industry redirected itself to support production of civil aircrafts (primarily the Airbus Industries) and activities of the European Space Agency. Owing to this new direction, aircrafts are no longer being manufactured in Finland but, instead, a relatively broad network of subcontractors has developed to produce parts and services.



Myrsky aircraft in assembly line during the Second World War.

Picture: Finnish Air Force Museum

# FORERUNNERS IN AVIATION ECONOMY

[Testbed Finland concept](#) helps Finnish innovative companies to raise to global players.

Aviation related testbed concept offers global companies a platform to join the R&D projects, test their services and benefit the favorable regulation environment and spacious aviation environment in Finland. Testbed Finland is funded by Business Finland.

In addition to testbeds, Finnish research organizations and universities runs several large development projects related to aviation, airports, autonomy and UAV's.

*“Europe will be the first region in the world to have a comprehensive set of rules ensuring safe, secure and sustainable operations of drones both, for commercial and leisure activities. Common rules will help foster investment, innovation and growth in this promising sector.”*

Patrick Ky, Executive Director of EASA.

# FINNISH AVIATION LANDSCAPE



## DRONE SYSTEMS

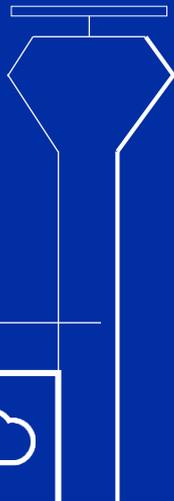
DRONE MANUFACTURING  
AUTONOMOUS DOCKING STATIONS  
DRONE AI (autonomous sensor awareness)  
AUGMENTED REALITY INTERFACES  
SWARM CONTROL  
DATA ANALYTICS  
DATA LINKS AND CONNECTIVITY  
DOCKING SYSTEMS

## AIRPORT TECHNOLOGY

AIR NAVIGATION SERVICES  
AVIATION WEATHER  
CONNECTIVITY  
CYBER SECURITY  
REMOTE AND VIRTUAL TOWER  
DATA ANALYSIS AND STORAGE

## ENERGY AND FUEL

ENERGY STORAGE  
BATTERY CHARGING  
BATTERY CHEMICALS  
CHARGING SYSTEMS  
BIO AND SYNTHETIC FUEL



## RESEARCH, TESTING AND EDUCATION

SMALL AIRPORTS FOR TESTING  
FLIGHT CORRIDOR TESTBED  
NEW BUSINESS MODELS  
PILOT TRAINING  
TECHNICAL TRAINING  
REGULATION

## MAINTENANCE, REPAIR AND OPERATIONS

AIRCRAFT MRO AND MODIFICATIONS  
HELICOPTER MRO AND MODIFICATIONS  
AERO ENGINE MRO  
COMPONENT AND ACCESSORY MRO

## AIRCRAFT COMPONENTS

DRIVES AND INVERTERS  
MOTORS  
POWERTRAIN  
MICROELECTRONICS  
ENERGY STORAGE  
MATERIAL SCIENCE



# FINLAND OFFERS A WIDE RANGE OF AVIATION RELATED PRODUCTS, SERVICES AND INNOVATIONS

**Energy and Fuel in Aviation**



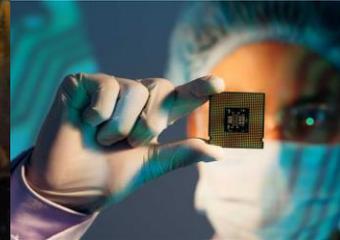
**Airport Technology**



**Drone and Multiplatform Systems**



**Research, Testing, Education and Training**



**Avionics, Aircraft Manufacturing and MRO**



# ENERGY AND FUEL IN AVIATION



Energy management in airports and sustainability in aviation are key topics discussed worldwide today. Finland is a well-known forerunner in technologies related to energy management, research and future technologies for storing the energy and producing sustainable aviation fuel.



# ENERGY AND FUEL IN AVIATION

Finnish companies offer a range of energy and fuel solutions for airports and aviation.

## Energy Storage



Design and manufacture of refueling and other ground service vehicles and equipment.  
[www.jet-tekno.fi](http://www.jet-tekno.fi)



**MERUS POWER**  
Improved power quality to save energy, reduce costs and to extend operational life of machinery.  
<https://www.meruspower.fi/>



Applied battery research  
<https://www.vttresearch.com/en/our-services/battery-technologies>



**WÄRTSILÄ**  
advanced stand-alone energy storage solutions  
<https://www.wartsila.com/energy/explore-solutions/energy-storage>

## Battery and Car Charging Systems



Sustainable electric vehicle charging solutions.  
<https://www.ensto.com/electric-vehicle-charging/>



A broad range of vehicle charging solutions.  
<https://www.fortum.com/about-charging-ev>



EV charging solutions for large properties.  
<https://www.parkingenergy.com/>

## Battery Chemicals



Battery mineral production starting end of 2020  
<https://www.terraframe.com/news-from-the-mine/news/2018/10/terraframe-decides-to-invest-in-battery-chemicals-plant.html>



Batteries from Finland program  
<https://www.businessfinland.fi/en/for-finnish-customers/services/programs/batteries-from-finland/>

## Bio and Synthetic Fuel



Neste MY Renewable Jet Fuel™ reduces GHG emissions up to 80% compared to fossil fuels.  
<https://www.neste.com/companies/solutions/aviation>



Synthetic methane fuel as a side product from industry processes.  
<https://www.gpower.fi/ota-yhteystta/>



Producing hydrocarbons suitable for fuel and plastic production.  
<https://www.soletairpower.fi/>

## Fuel Cell Technology



Solid oxide fuel cell systems for distributed power generation markets  
<http://convion.fi/>



Fuel cell technology  
Power generation with solid oxide fuel cell and stack technology.  
<https://elcogen.com/>



portable hydrogen storage units for use with fuel cells and other applications that require a source of hydrogen.  
<https://hydrocell.fi/>



Wide range of fuel cell, stack and system-level testing and characterisation services  
<https://www.vttresearch.com/en/our-services/fuel-cells-and-hydrogen>

# FINNISH SUCCESS STORY

## NESTE SUSTAINABLE AVIATION FUEL (SAF)

- Neste (NESTE, Nasdaq Helsinki) is the world's largest producer of renewable diesel refined from waste and residues, introducing renewable solutions also to the aviation and plastics industries.
- Sustainable aviation fuels are a key part of the long-term solution for reducing the CO2 footprint of aviation, as they reduce the CO2 emissions by up to 80% compared to fossil fuels.
- Neste delivers sustainable aviation fuel to KLM, Lufthansa and Finnair.
- <https://www.neste.com/releases-and-news/aviation/neste-and-finnair-partner-reduce-co2-footprint-flying-sustainable-aviation-fuels>
- <https://www.neste.com/releases-and-news/aviation/neste-supply-klm-additional-sustainable-aviation-fuel-flights-out-schiphol>
- <https://www.neste.com/releases-and-news/aviation/neste-and-lufthansa-collaborate-and-aim-more-sustainable-aviation>

# NESTE



# AIRPORT TECHNOLOGY



Finland has a vivid technology cluster providing products and services related to Airport Technology. Companies provide technologies, service solutions and research to airports as the end customers.

- connectivity
- security and surveillance
- aviation sensors
- data analysis and storage
- airport operations management
- airport equipment and maintenance
- aircraft shelters



## Connectivity



provides and integrates TETRA professional mobile radio solutions, Emergency Response Centre solutions and Secure broadband data communication solutions.

<http://www.airbusdefenceandspace.com/>

**Bittium**

Tactical and critical communication end user devices

<https://bittium.com/>



RF solutions, SAR components, embedded system solutions.

<https://www.da-group.com>

**EDZCOM**  
a Cobham company

Design, building and operation of dedicated wireless networks for industrial clients.

<http://www.edzcom.com/>

**Etteplan**

Embedded systems, Wireless Connectivity, Software Solutions.

[www.etteplan.com](http://www.etteplan.com)

**NOKIA**

Private LTE and 5G connectivity systems.

<https://www.nokia.com/>

**Patria**

Design and manufacturing of avionics, electronics parts, devices, wiring harnesses and flight training systems.

[www.patriagroup.com](http://www.patriagroup.com)

## Aviation Sensors and Systems

**GASERA**

Ultimate performance gas analysis.

<https://www.gasera.fi/>

**TECONER**

Runway weather monitoring.

[www.teconer.fi/en](http://www.teconer.fi/en)

**VAISALA**

World leading aviation weather solutions.

<http://vaisala.com>

## Security and Surveillance

**ASQELLA**

passive submillimetre-wave camera device for concealed threat detection

<https://asqella.com/>

**harp**  
technologies

RF and microwave technology and R&D services, radar instruments, subsystems, and antennas.

<https://harptechnologies.com>

**INSTA**  
ILS

Insta ILS Oy is specialized in avionics life cycle support services.

[www.instagroup.fi](http://www.instagroup.fi)

**KÄRSA**

ultrasensitive threat detection in air cargo.

[www.karsa.fi](http://www.karsa.fi)

**RT**  
Rumble Tools  
AVIATION SYSTEMS

Autonomous drone surveillance systems

<https://rumbletools.com/>

**TELESTE**

broadband video and data communication networks and services.

<https://www.teleste.com/>

**VTT**

Applied research on next generation defence and security solutions.

<https://www.vttresearch.com/en/industries/defence>

## Airport Equipment and Maintenance

**ABB**

Electrification solutions.

<https://new.abb.com/powere-distribution>

**Captium**  
Security & Defence Oy

Support for systems, technical solutions, services, and industrial maintenance and lifecycle operations in security and defense markets.

<http://www.captium.fi/>

**EASYLED**

Led lighting solutions for airports.

[www.easyled.fi](http://www.easyled.fi)

**EFLA**  
EFLA HEL PARTNER

Airfield ground lighting components.

[www.efla.net](http://www.efla.net)

**EXEL**  
COMPOSITES

Fully frangible mast and pole solutions for airports.

<https://exelcomposites.com/composite-solutions/infrastructure/frangible-structures-airports/>

**FINNAIR**

Finnair Technical Services supports Finnair Oyj flight operations by providing Line Maintenance, Engineering services and sourcing rest of the maintenance for Finnair Oyj Fleet.

[www.finnair.com](http://www.finnair.com)

**HYDROMETA**

Runoff water treatment in Airfields.

[www.hydrometa.fi](http://www.hydrometa.fi)

**MOVENTOR**

Runway maintenance machinery.

[www.moventor.com](http://www.moventor.com)

**VALTRA**

Aviation groundcare vehicles.

<https://www.valtra.com/businesses-and-segments/aviation-groundcare.html>

## Aircraft Shelters

**BEST-HALL**

PVC aviation hangars.  
<https://www.besthall.com/buildings/aviation-hangars/>

**CHAMPIONDOOR**

Airport hangar doors  
[www.championdoor.com](http://www.championdoor.com)

**CONLOG GROUP**

Tactical and logistics shelters/containers and special vehicles for defence and civil purposes.  
[www.conlog-group.fi](http://www.conlog-group.fi)

**FINCON OY**  
Your partner in ballistic solutions

Electronic security systems, surveillance and tracking systems - Ballistic defence solutions for vehicles in industry and cash transit.  
<http://www.fincon.fi/>

**FY-COMPOSITES**

Customized light weight composite products for ballistic protection and structural applications.  
[www.fy-composites.com](http://www.fy-composites.com)

**KT-SHELTER**

Patented rapid deployment shelter for military, crisis management and industry needs.  
[www.kt-shelter.com](http://www.kt-shelter.com)

**morehouse**

Laboratory-, storage-, workspace-, explosives storage and transportation containers for demanding environments.  
[www.morehouse.fi](http://www.morehouse.fi)

**SCANTARP**

Producer of coated fabrics.  
<http://www.scantarp.fi/en>

## Others

**MACHINERY**

Siesel generators and standby power units as well as their life cycle services.  
<https://www.machinery.fi/en/motors-and-generators/generators-and-emergency-power-systems>

**MARIOFF**

Water mist fire protection technology.  
[www.marioff.com](http://www.marioff.com)

**LASER GAS**

Oxygen and nitrogen generators for military and civilian purposes.  
<http://www.lasergas.fi/index.html>

# AIRPORT AND AIRSPACE DATA MANAGEMENT

## Data Analysis and Storage



A Nordic software house specialized in aviation industry solutions.

<https://www.qoco.aero/>



Data analytics, machine learning systems

<http://reaktor.com>



SIIIL.

Airport situational awareness solution

<https://www.siiil.com/finavia-situational-awareness-solution-for-airports>



Digital twins and digital asset management

[www.sitowise.com/services/digital-solutions](http://www.sitowise.com/services/digital-solutions)

## Airport Operations Management



Airport telematics including tracking of vehicles usage, vehicle positioning and employee/driver identification.



Optimizing solutions for airport operations

<https://www.fourkind.com/>



Flight delay prediction - improved AI-based situational awareness of air traffic for operations control center

<https://silo.ai/>

## Airspace design services

Aviamaps



Air Navigation Services and Airspace Management.

<https://www.airspace.fi>



near real-time aviation map platform and easy-to-use flight planning tools.

<https://aviamaps.com/map>

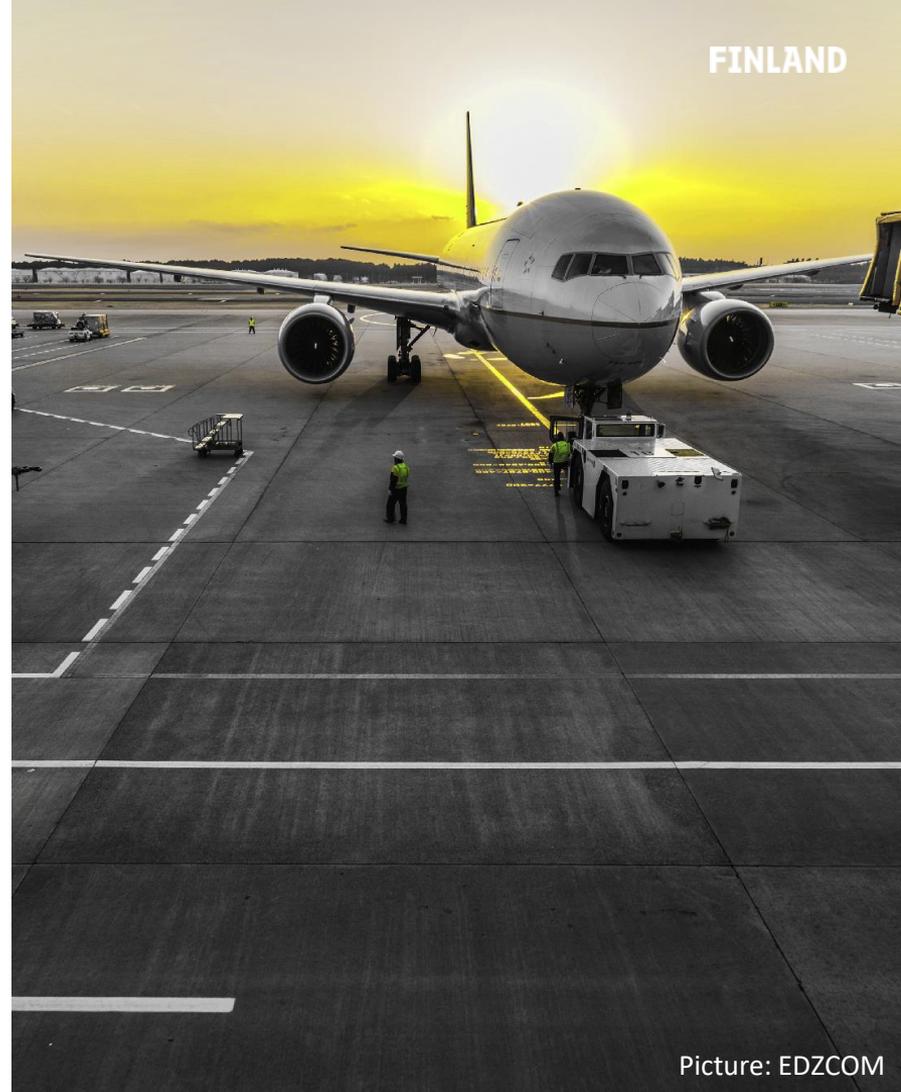
# FINNISH SUCCESS STORY UNPRECEDENTED CONNECTIVITY AT HELSINKI AIRPORT

- EDZCOM, a Cellnex company, is the Nordic market leader in Edge Connectivity, designing, building and operating private wireless connectivity solutions - at the edge.
- By using Nokia technologies, EDZCOM rolled out the most advanced IoT and campus network functions and implemented a reliable data network across the whole airport to:
  - ensure a smooth experience for the passengers and
  - empower the airlines at the airport to manage their operations efficiently and effectively.
- Seamless connectivity is vital for mobile workers and operations, de-icing, marshaller services, cars, buses, and other equipment and remote operations.
- Edge Connectivity solution, using private LTE network, is helping Helsinki airport to extend the coverage and ensure reliable connectivity for its business critical operations and in the future, will become a part of the core airport infrastructure.

[Read the full story](#)

FINAVIA

EDZCOM  
a Cellnex company



# FINNISH SUCCESS STORY

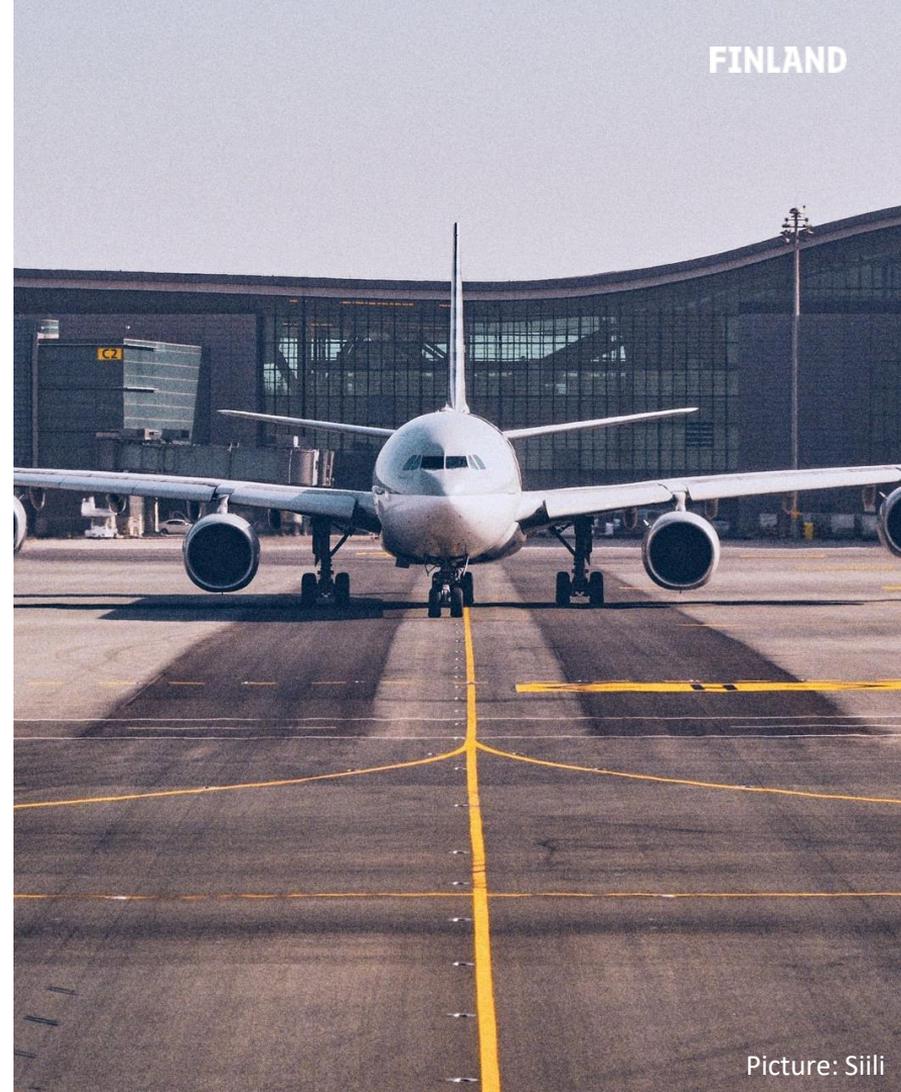
## SITUATIONAL AWARENESS SOLUTION FOR AIRPORTS

- "During disruptions we have now many ways to share the information with a community, and really make sure that the people get the information".

Jani Ceder, Head of Airport Operations Center

- [Read the full story](#)

FINAVIA



# FINNISH SUCCESS STORY

## THE OPTIMAL AIRPORT

- At Kittilä Airport, the number of passengers grew by 12% in 2018. This growth puts heavy pressure on infrastructure and resources in the region.
- Together with Finavia and Reaktor, Fourkind created an ERP system for the airport with the optimization model at its heart. Instead of dabbling with pen and paper on top of a spreadsheet, the airport parking operators can now build a parking plan in and reserve the busses they need from the same simple user interface. If situations change during the day, a new optimal plan can be created in seconds.
- [Read the full story](#)

*“This project was not about optimizing banners for a website, this was about optimizing the logistics of planes and the experience of hundreds of thousands of people. Thanks to the tight collaboration between the development team, Finavia IT and Kittilä Airport end users, we were able to solve complex and end user problems by utilising modern technologies and airport data to create something new in a very pragmatic way. Great success.”*

— Henri Lehtonen, Project lead at Finavia



FINAVIA

FOURKIND

# FINNISH SUCCESS STORY

## ENSURING PASSENGER SAFETY IN THE AIRPORT TRAIN STATION

- Aviapolis station in Helsinki Airport is located 40 meters below the ground level and can fit up to 2000 passengers at a time, connecting the area with Helsinki city center. Inaugurated in 2015, it is the first underground commuter train station in Finland.
- An automatic sprinkler system was mandatory to ensure life safety and evacuation in case of an emergency. Marioff HI-FOG® water mist fire protection system protects the technical rooms, corridors, platforms, entrance buildings, air conditioning spaces as well as technical machinery within the station's escalators.
- [Read the full story](#)

FINAVIA

MARIOFF



Picture: Marioff

# DRONE AND MULTIPLATFORM SYSTEMS

A white quadcopter drone is shown from a low-angle perspective, flying upwards against a bright blue sky with scattered white clouds. The drone is carrying a brown cardboard box secured with black straps. The drone's propellers are blurred, suggesting motion. The overall scene is bright and clear.

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The application potential of remote sensing technology based small unmanned airborne vehicles is nearly unlimited. Finnish companies offer a wide range of technologies and services executed with help of drones. Some examples of application potential are: energy network monitoring, law enforcement & safety, land surveying and topographic mapping, sustainable built environment, precision agriculture and forestry, water quality monitoring, environmental impact assessment, infrastructure applications and many more.

- Drone manufacturing and docking systems
- Drone AI and data analytics
- User interfaces, simulation and training
- Flight information management
- Counter-drone passive radar air surveillance



# DRONE AND MULTIPLATFORM SYSTEMS

## Drone manufacturing and docking systems



Manufacturing unmanned aerial systems for long-range heavy-duty use  
<http://avartek.fi/>



Disruptive electric aircraft delivery systems.  
[www.lentola.com](http://www.lentola.com)

**NOKIA**

Nokia Drone Networks is an end-to-end solution comprising Nokia drones, private and secure mobile broadband, cloud connectivity, and a control center.  
<https://www.dac.nokia.com/applications/nokia-drone-networks/>

**NORDIC DRONES**

High-quality aerial system solutions for professional use  
<https://nordicdrones.fi/en/>



Autonomous drone systems  
<https://rumbletools.com/>

## Drone AI and Data Analytics



Expert in edge and real-time data analytics  
<https://www.advian.fi/en/>



Digital asset tracking and management platform  
<https://bluugo.fi>



Engineering, precision positioning, data analytics and software development for safety critical and autonomous systems.  
[www.etteplan.com](http://www.etteplan.com)



Drone Service Provider  
<https://www.flybyguyss.fi>



Engineering and software development for safety and mission critical systems.  
<https://huld.io/industries/space/>



Drone-based tree wise forest inventory  
[www.mosaicmill.com](http://www.mosaicmill.com)

## Helicopter and multiplatform operators



European Union Aviation Safety Agency (EASA) certified Aviation Training Organization  
<https://coptersafety.com/>



Helicopter emergency medical services  
<https://finnhems.fi/>



Multiplatform aerial services for the energy sector  
<http://www.heliwest.fi/en/>

## User Interfaces



Training and simulation solutions  
<https://www.insta.fi/en/services/csisr-and-situational-awareness/training-and-simulation>



Virtual model services and digital twins  
<https://www.sitowise.com/en/services/smart-city/virtual-city-model-services>



Human-eye resolution virtual and mixed reality products  
<https://varjo.com/>

## Flight Information Management



A remote operation platform for automated aerial and ground vehicles fleets for complex urban environments  
<https://www.fleetonomy.ai/>



Connectivity and Counter-drone passive radar air surveillance.  
[www.patriagroup.com](http://www.patriagroup.com)



Unmanned aviation experts  
<https://www.robots.expert/>



Applied research on next generation drone solutions.  
[www.vttresearch.com/drones](http://www.vttresearch.com/drones)

## FINNISH SUCCESS STORY

# AUTONOMOUS DRONE BORDER SURVEILLANCE

- RumbleTools Oy is a Finnish high technology company based in Imatra, whose core competence is process automation through robotics and software development. Rumble Tools Oy has for a long time developed a high-end Unmanned Aerial Systems (UAS) for various demanding applications.
- This development has resulted in an autonomous robotic drone solution called RT ASTAR (RumbleTools Autonomous Surveillance, Target Acquisition and Reconnaissance System), which is unique intelligent system of drones with a smart docking station. This entity makes possible for the system drones to be always ready to fly independently in the operating environment where it is integrated according to customer requirements.

<http://rumbletools.com>



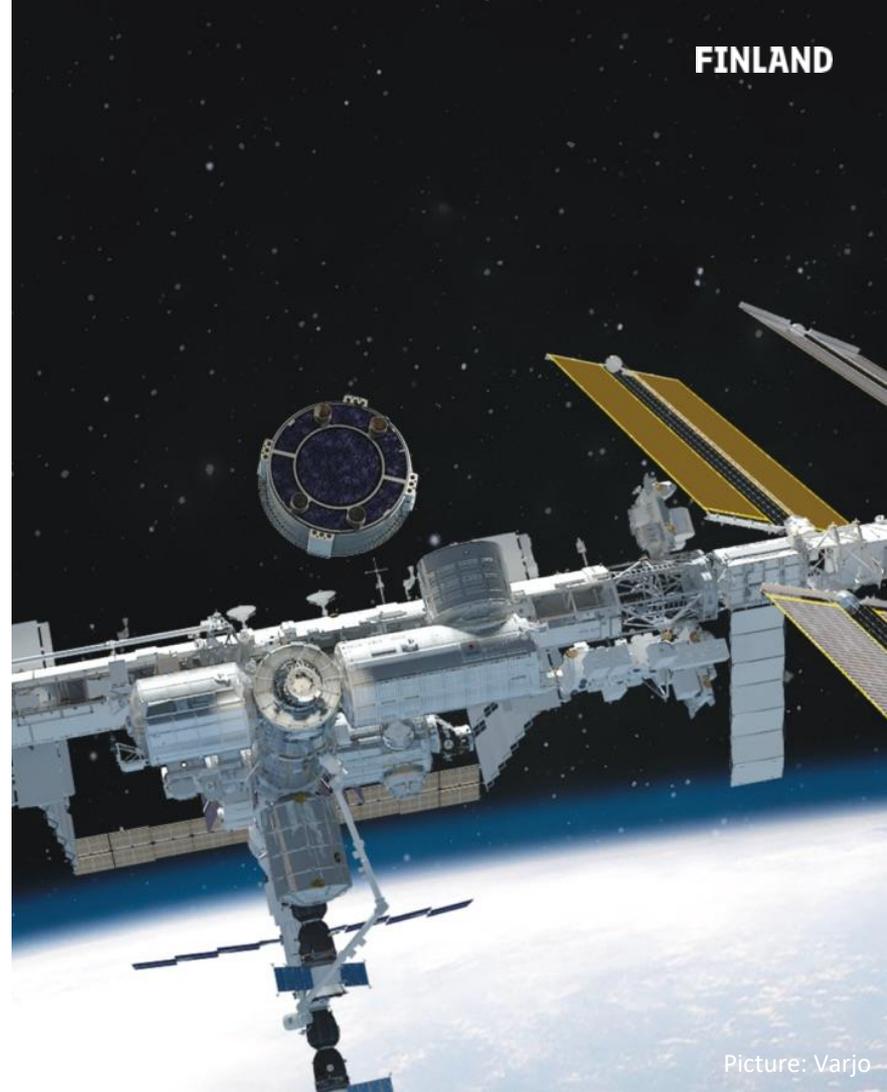
# FINNISH SUCCESS STORY

## A NEW ERA IN ASTRONAUT TRAINING WITH VIRTUAL REALITY

- With Varjo, the Boeing Starliner program unlocks an entirely new way for astronauts to prepare for spaceflight. Varjo allows astronaut training – from pre-launch to docking to landing – entirely in VR for the first time.
- [Read the full story](#)

V A R J O

FINLAND



Picture: Varjo



# AVIONICS, AIRCRAFT MANUFACTURING AND MRO

Finnish avionics landscape is defined by a vibrant cluster of contract electronics, components and materials manufacturing for defence industry and international aircraft manufacturers. This competence is complemented by a number of agile innovative companies with services in new business areas like electric aviation.

Finnish competences include:

- MRO – maintenance, repair, overhaul services
- Light electric aircraft manufacturing
- Driver and inverter technology
- Electronic components
- Material science and aircraft components
- Data and communications solutions
- Design and manufacturing of Aerospace Composites and sheet metal structures and assemblies
- Digitalized MRO-processes



## Materials and Structures



<https://new.abb.com/power-converters-inverters>



Gas turbine filtration products and precision coating  
<https://www.ahlstrom-munksjo.com/>



ALD thin film technology  
[www.beneq.com](http://www.beneq.com)



Laser marking solutions for demanding use cases  
<https://cajotechnologies.com/>



Additive manufacturing design, technical analyses, advanced manufacturing technologies  
[www.etteplan.com](http://www.etteplan.com)



Exel composite solutions help lower vehicle weight, provide strength and help supply chain complexity.  
<https://www.exelcomposites.com/>



Cleaning and FPI Solutions.  
<https://finnsonic.com/eng>



Trusted innovation partner for complex manufacturing needs.  
<https://www.flexmill.fi/>



Fully automated chemical surface treatment plants  
<https://www.galvatek.eu/industries/aviation/>



Designs and manufactures demanding, complex product families, components, instruments and modules for industrial, healthcare and defence industries.  
[www.mectalent.com](http://www.mectalent.com)



Patria is an international provider of defence, security and aviation life cycle support services, pilot training and technology solutions.  
[www.patriagroup.com](http://www.patriagroup.com)



There are two production plants, the pyrotechnical factory and the machine workshop specializing in providing innovative and practical products to satisfy customer requirements in the defence, security and machine industry.  
[www.raikka.fi](http://www.raikka.fi)



Safe and functional chromium coating to meet changing health and environmental regulations.  
<https://savroc.com/>



Long term MRO collaboration with Finnish Air Forces  
<https://bit.ly/2G7MOB1>

## Electric Motors and Powertrain



<https://www.danfoss.com/en/>



The first one cell powertrain system in the world  
<https://i7drive.eu/home/>



Innovative motor and powertrain solutions for automotive and aviation industry.  
<https://www.toridion.com/technology/aviation-powertrain>

## Others



Aerospace solutions from concept design to production and implementation.  
<https://www.elomatic.com>



Software Solutions for Aviation Industry  
[www.qoco.aero](http://www.qoco.aero)

## Electronic Components



Advanced electronics and high technology solutions and products  
[www.da-group.fi](http://www.da-group.fi)



Distributor of electromechanical products, communication systems and fibre optics equipment.  
[www.enkom-active.fi](http://www.enkom-active.fi)



RF and microwave technology  
<https://www.harptechnologies.com>



Innovative aviation technology products, modifications and systems  
<https://www.insta.fi/en/services/aviation-solutions/aviation-products>



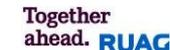
Rugged, transparent and in-glass laminated thin film electroluminescent displays.  
<https://www.lumineq.com/>



Manufactures complete electrical systems for military land, air and naval systems.  
[www.milectria.fi](http://www.milectria.fi)



Design and manufacture of optoelectronic products for distance measurement.  
[www.noptel.fi](http://www.noptel.fi)



Design, development, manufacturing and testing of electronic equipment for demanding environment.  
<https://www.ruag.com/en/products-services/air>



Manufacturer of electronic devices and modules  
<http://www.selmic.com/>



Connectors, connection systems, tools and spare parts  
[www.tgnordic.fi](http://www.tgnordic.fi)

## FINNISH SUCCESS STORY

# ROLLS-ROYCE OPTS FOR QOCO SYSTEMS AS DIGITALISATION PARTNER

“QOCO’s EngineData.io gives airlines complete control over the data they choose to automatically share with and receive from us. And they have confidence that the data transfer is fully secure. It reduces the effort required by our customers to operate some services by over 50%.”

**Richard Swallow**, Head of Digital Service Readiness at Rolls-Royce

- [Read the full story](#)



# A THRIVING ECOSYSTEM OF RESEARCH, TESTING AND EDUCATION

Finland's position as the global technology Superpower is based on active co-operation between the Public, Private and Academia, active start-up scene and focus testbed environments. In addition, strong engineering and multidisciplinary competences combined with Finns' natural hunger for problem solving have made Finland one of the most innovative nations in the world. This is also the basis for our Aviation know-how.

# RESEARCH, TESTING AND EDUCATION

## Small Airports

**FINAVIA**

21 regional airports  
<https://www.finavia.fi/en/airports>

**Helsinki-East**  
AERODROME

Innovation center for developing unmanned, electric aircraft, including strong involvement to digitalization  
<https://www.redstone.aero/>

**LSK**  
BUSINESS PARK

LSK Business Park's business idea is to create new opportunities for businesses while taking advantage of the potential of Ikkokola region.  
<http://www.lskbusinesspark.fi/en/home.html>

**FINLAND**  
**UAS**  
CENTRE

UAS CENTRE NUMMELA  
 Support, training and assistance of commercial drone operators  
<https://uasfinland.eu/eng/index.html>

## Training technology

**INSTA**

drone operations training and infrastructure  
<https://www.insta.fi/en/services/aviation-solutions/aviation-products>

**VARJO**

VR/XR Training technology provider  
[www.varjo.com](http://www.varjo.com)

## Regulation

**Droneinfo.fi**

Service portal for Traficom  
<https://www.droneinfo.fi/en>

**Fintraffic**

flight route and air navigation services at 21 Finavia-operated airports and Lappeenranta Airport.  
<https://www.fintraffic.fi/en/ans>

**TRAFICOM**  
TRANSPORT AND COMMUNICATIONS AGENCY

The Transport and Communications Agency Traficom is an authority in permit, licence, registration, approval, safety and security matters.  
<https://www.traficom.fi/>

**LVM** MINISTRY OF TRANSPORT AND COMMUNICATIONS

Ministry of Transport and Communications  
<https://www.lvm.fi/en/home>

## Aviation Research

**A!**  
Aalto University

<https://www.aalto.fi/en/services/unmanned-aviation>

**Tampere University**

Research in aircraft components and materials as well as unmanned aviation  
<https://research.tuni.fi/mrg/>

**VTT**

Commercial R&D  
<https://www.vttresearch.com/en>

## Aviation

**FINNAIR**

<https://company.finnair.com/en/media/all-releases/news?id=3429095>

## Training and Education

**Airport College.com**

Complete Online Training Service for Airlines, Airport Ground Handling and Logistics.  
<https://airportcollege.com/>

**COPTERSAFETY**

In and out copter training  
<https://www.coptersafety.com>

**Haaga-Helia**

Degree Programme in Aviation and Tourism Business  
<http://www.haaga-helia.fi/en/education/bachelor-degree-programmes/degree-programme-aviation-business>

**INSTA**

drone operations training and infrastructure  
<https://www.insta.fi/en/services/aviation-solutions/aviation-products>

**Patria**

Defence, security and aviation life cycle support services, pilot training and technology solutions.  
[www.patriagroup.com](http://www.patriagroup.com)

**XAMK**  
South-Eastern Finland  
University of Applied Sciences

Degree Programme in Aviation and Tourism Business  
[www.studentum.fi](http://www.studentum.fi)

**SUOMEN ILMALIIKOPISTO**  
FINNISH AVIATION ACADEMY

Vocational special purpose aviation school.  
<http://www.finaa.fi/en/home.html>

**Tampere University**

Aviation technology engineering programme, certified aircraft maintenance education  
<https://www.tuni.fi/>

## Radar, Wireless communications, Security imaging

### OUR SOLUTION

Research and development in radars, wireless communications, anti-drone solutions and security imaging

### COMPETITIVE ADVANTAGE

Strong expertise on applied research.

### IDEAL CLIENT

Companies interested in disruptive products and services based on new technologies in the field of electrical engineering.

### COMPANY

Research in electrical engineering.





## FIELDS OF EXPERTISE

- Aircraft Systems (ATA 05 -79)
- Unmanned Systems
- Collaborative Autonomous Systems
- Condition Monitoring
- Reliability / Availability / Maintenance
- Human Performance / Human Factors

*From the depth of 5000 metres to the altitude of 50 000 feet*

# Aircraft Engineering in Tampere University

## MECHATRONICS RESEARCH GROUP (MRG)

Multidisciplinary research group consisting of experts of various fields from structural analysis to embedded systems. The research profile of MRG is focused on complex multi-domain machine systems.

## RESEARCH

Multidisciplinary basic and applied research on complex machine systems with strong background and Experience on aircraft systems and reliability/ availability research of aircrafts.

## COLLABORATION/ COOPERATION

Strong collaboration and co-operation with industry, academia and governmental organizations.

## EDUCATION

Specialized MSc aircraft engineering major in mechanical engineering program. Tailored continuing education courses for industry.

# PROJECTS AND ECOSYSTEMS

# SELECTED AVIATION ECOSYSTEMS

Association of Finnish Defense and Aerospace Industries

<http://pia.teknologiateollisuus.fi/node/60>

AiRRhow Alliance

<https://www.airrhow.fi/>

Finnish Aeronautical Association

<https://www.ilmailuliitto.fi/briefly-in-english/>

DroneFinland is a research and innovation center for drone remote sensing.

<https://dronefinland.fi/>

Nordic Network for Electric Aviation (NEA)

<https://www.nordicinnovation.org/programs/nordic-network-electric-aviation-nea>

Unmanned Aircraft System Innovation ecosystem in Finland

<https://www.arcticdronelabs.com/>

RAAS – Rethinking Autonomy and Safety

The principal target of the RAAS alliance is to advance research on autonomous transport and logistics in global markets.

<https://autonomous.fi/>



FINLAND



Picture: Redstone.aero

# SELECTED AVIATION DEVELOPMENT PROJECTS IN FINLAND

## Remote Tower Centre services in Finland

There are over 60 airfields in Finland, of which 20 have scheduled passenger traffic. These offer an infrastructure for new technologies like remote tower and drone operations.

## FAIR, Finding Innovations to Accelerate Implementation of Electric Regional Aviation 2020-2022

Project to support early implementation and efficient commercialization of electric regional aviation in the Kvarken region

<http://www.flyfairkvarken.com/>

## Autonomous and Collaborative Offshore Robotics (aCOLOR)

2018-2020

creates the basic methodology for an autonomous offshore robotic system and open demonstration in a working environment.

<https://www.tuni.fi/en/research/autonomous-and-collaborative-offshore-robotics-acolor-0>

## Research in positioning:

<https://www.tuni.fi/en/research/signal-processing-wireless-positioning-group-tltpos>

## Drone and un-manned aerial vehicles:

<https://www.tuni.fi/en/research/drone-expert>

<https://www.tuni.fi/en/research/autonomous-and-collaborative-offshore-robotics-acolor-0>

## AI and imaging - sensory solutions:

<https://www.tuni.fi/en/research/computational-imaging-group>



# BUSINESS FINLAND PROGRAMS

# SUSTAINABLE MANUFACTURING FINLAND

Objective: to develop Finland into a global superpower of smart, sustainable manufacturing through **increased collaboration, digitalization** and larger **carbon handprint** for the manufacturing industry.

The program focuses on companies manufacturing piece goods and activates and connects SMEs, contract manufacturers and large enterprises with anchor company potential across manufacturing industry sectors.

DURATION  
2019-2023

INNOVATION  
FUNDING  
150 MEUR

MARKETS  
Export: EU, China, SEA, USA  
Innovation: Germany, Sweden, USA,  
Japan, Korea, Canada  
Invest in: EU, UK

# GLOBAL INNOVATION PARTNERSHIP PROGRAM (GIPP)

- Finland will make its final decision on major defense procurement programs, valued up to 10 billion €, by 2021.
- The interest surrounding these acquisitions offers a unique opportunity to promote broader business cooperation.
- Finland's unique expertise and competence provide a solid foundation for building new trade relations and cooperation in innovation.
- GIPP program focuses on identifying and promoting cooperation opportunities outside the scope of the defense procurement programs and is not an integral part of the Finnish government's procurement process.



- Focus markets
  - France, Sweden, UK, USA
- Focus project ideas
  - Smart Maritime
  - Digital Health & AI
  - Airport Cluster & Aviation
  - Critical Communications & Digital Trust
  - New Space Economy



# FINNISH COMPANIES

# FINNISH COMPANIES

FINLAND

CDV/CIN

EFLA  
YOUR AGL PARTNER

GoSleep/



NORDIC DRONES  
BETTER FLY WELL

SITOWISE

AVIAMAPS

Fuel cell technology  
elcogen

harp  
technologies

LUMINEQ®

Patria

soletair power

Airport  
College.com

ELOMATIC  
CONSULTING & ENGINEERING

Helsinki-East  
AERODROME

MARIGFF

+ POWER

Teconer

AVARTEK

Etteplan

huld

mectalent®

QOCO



beneq

HYDROMETA

ROBONIC



bluuigo

FINNAIR

INSTA

MILECTRIA



robots.expert

VAISALA

CAJO  
THE ETERNAL TRACE

FinnSonic

KÄRSA

MOSAICMILL

Together  
ahead. RUAG

VALTRA

CHAMPIONDOOR®

COPTERSAFETY

FLEETONOMY

KEYMET

MOVENTOR

Rumble Tools  
UNMANNED SYSTEMS

DA-GROUP

Flexmill



KT-SHELTER

NESTE

SAVOX

VÄRJØ

EASYLED

DRIVE

NOKIA

SOUROC  
HARD CHROMIUM TECHNOLOGY.

VTT

EDZCOM  
a Cellnex company

FLYBY  
GUYS

LASER GAS

SOUROC  
HARD CHROMIUM TECHNOLOGY.

# New Heights with Refined Analytics

## OUR SOLUTION

Advian offers Edge AI solutions utilizing real-time drone data from variety of sensors- video camera, thermal camera, multi-/hyperspectral, LiDAR, GNSS, inertia etc. With sensor fusion we combine drone data to other data sources to create new insights to automate customer's business processes.

Our solutions works within various business functions like asset management, condition monitoring, precision farming and forestry, safety & security. Our Edge AI solutions are widely used also in manufacturing, energy, retail and transportation industries.

## COMPETITIVE ADVANTAGE

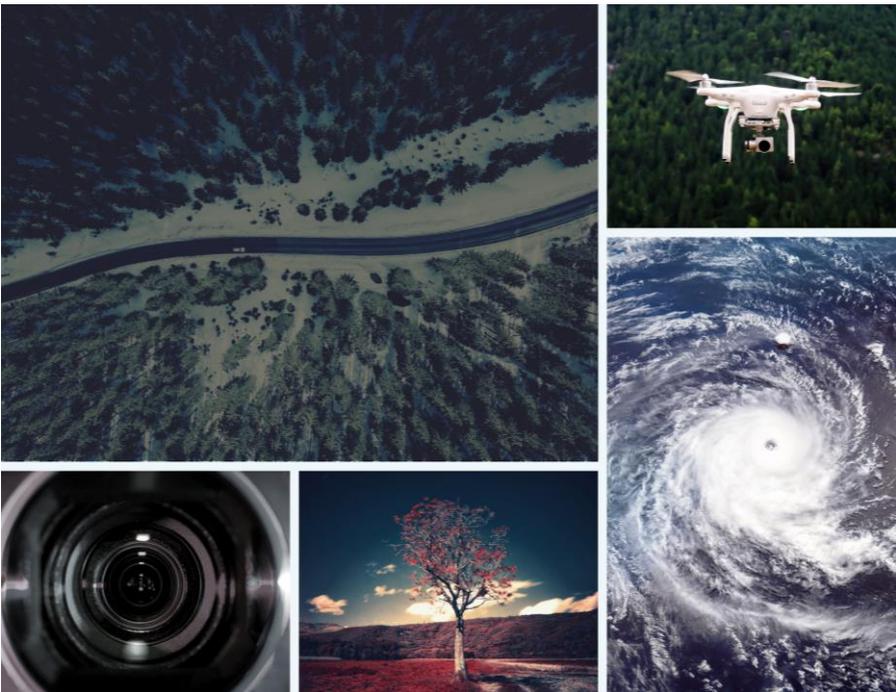
Advian offers a unique combination of edge computing, location intelligence and artificial intelligence / machine learning to provide edge AI solutions for multiple industries and countless amount of business use cases. Our competence ranges from electronics and sensors to novel machine learning models, from spatial analysis to sensor fusion algorithms, we always focus on business value for the customer.

## IDEAL CLIENT

Advian's ideal clients are pioneer companies or organizations in their respective fields who want to take advantage of data and emerging technologies. Our clients truly understand the value of data and wants to transform their businesses or disrupt existing business models.

## COMPANY

Advian enables you to gain an unfair competitive advantage with refined analytics solutions. With our help, you bring analytics into your processes and tie data to your business strategy. Our solutions consist of location data, external data and edge analytics - powered by AI and machine learning.



Janne Honkonen, CEO and Founder

[janne.honkonen@advian.fi](mailto:janne.honkonen@advian.fi), +358 400 494 492

<https://www.advian.fi/>



# Online Training for Airlines, Ground Handling and Logistics



## OUR SOLUTION

Airport College International Ltd. provides a comprehensive portfolio of online training courses designed to cover aviation safety, security and service topics. Course duration varies between 1 to 3 hours with the key objective to keep operational workforce competent. In order to ensure regulatory compliance, the course contents are based on international training standards established by governing bodies, such as the ICAO, FAA, EASA and IATA.

## COMPETITIVE ADVANTAGE

We have 30+ ready-to-use online eLearning courses available globally 24/7 in many languages including English, Japanese, Korean, Chinese, Finnish, Thai and more to come. We work with the leading experts in aviation industry to ensure that training content is relevant and always up-to-date. Our eLearning courses can be used for self-study, part of blended learning or as instructors' support material in the classroom. Course content can be customised to fit any company needs. AirportCollege.com training service reduce various costs typically associated in classroom training with potential to reduce training related costs significantly, by up to 80%.

## IDEAL CLIENT

Our ideal clients are aviation and logistics companies or organisations who want to take advantage of digital training in their employee development. Our clients understand the value of employee's operational skills, which builds the foundation for successful business and safe operations.

## COMPANY

Airport College International Ltd. located in Helsinki, is an independent company with a creative and commercial approach to your training and employee engagement management. Our services are used in over 140 countries and represented through our partner network in 20+ countries throughout Americas, Europe, Middle-East, Africa, Asia and Pacific.

Pertti Mero, CEO

[pertti.mero@airportcollege.com](mailto:pertti.mero@airportcollege.com), +358 50 392 7447

<https://airportcollege.com/>



# Avartek Drones



## OUR SOLUTION

Boxer Hybrid Gas-Electric Multicopter: Small physical size, easy to transport, quick to deploy.

Drone designed for: Surveillance, Defence, Mapping, Firefighting, Agriculture, Delivery  
Payload/endurance examples: 2 kg/225 min, 5 kg/135 min, 7 kg/70 min.

## COMPETITIVE ADVANTAGE

Long Experience in the UAV Technology (Avartek founded 1968)

First target drones delivered to the Finnish Defense in 1968, First target drone with autopilot delivered to the Finnish Defense in 1983, First international UAV Mail delivery from Finland to Estonia in 2015, Unique long endurance multicopters since 2017.

## IDEAL CLIENT

Authority / Defence / Industrial

## COMPANY

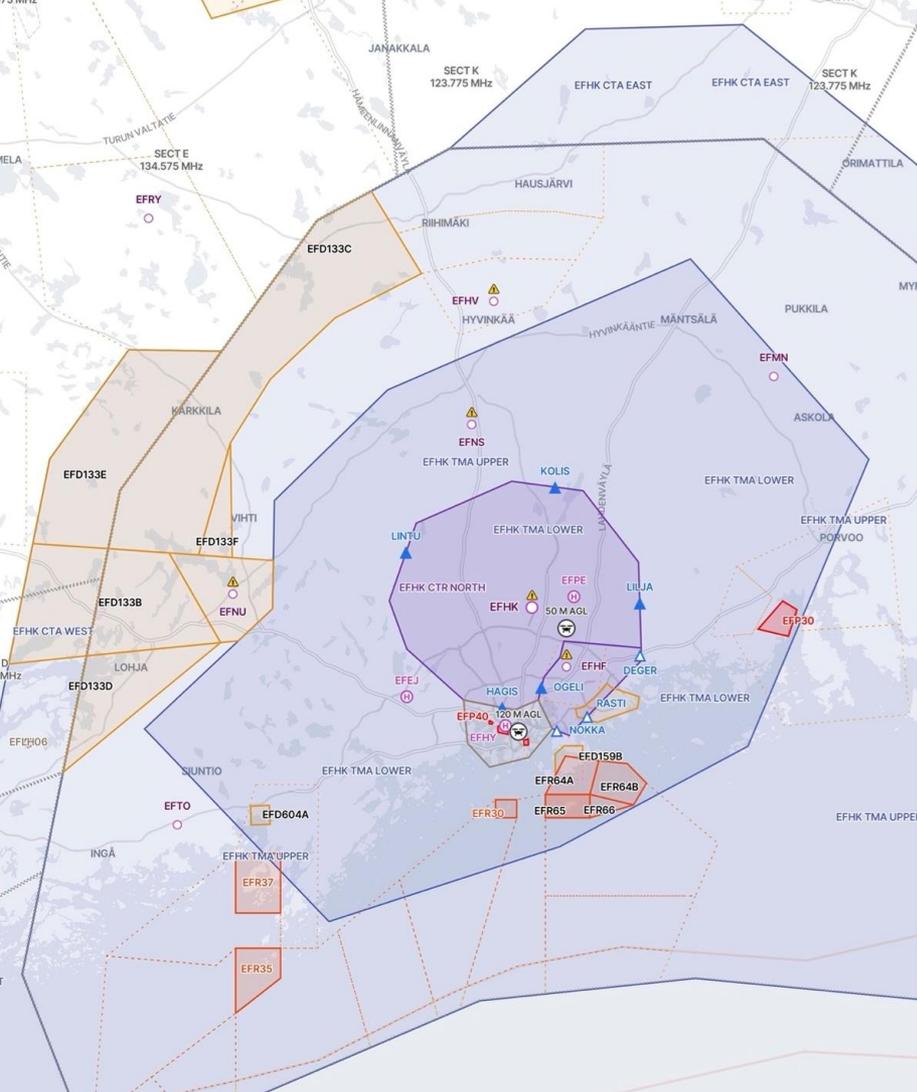
Advanced UAV technology

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Ronald Lindberg

[ronald@avartek.fi](mailto:ronald@avartek.fi), +358 400 570 022

[www.avartek.fi](http://www.avartek.fi)



## Mapping Aviation.

# AVIAMAPS

### OUR SOLUTION

Aviamaps Ltd is modernizing manned and unmanned aviation with a unique real-time aviation map platform and easy-to-use flight planning and airspace management tools. Aviamaps combines static airspace data with live supplements, NOTAMS and AUP/UUP data. Platform also visualizes drone geozones, weather, aircraft traffic and more. Flight announcements make it possible to communicate with other pilots and making aviation safer. Aviamaps is targeting to be the “google maps” of aviation.

### COMPETITIVE ADVANTAGE

Aviamaps provides unique modern real-time aviation map platform and makes it possible to connect easily to multiple data sources, and also to provide data for third parties.

### IDEAL CLIENT

Aviamaps platform is free to use for manned and unmanned pilots with almost any device by web and mobile apps. Our business plan is to license the platform for air navigation service providers and to help them innovate new ideas for aviation. We also sell easy-to-use data to third party.

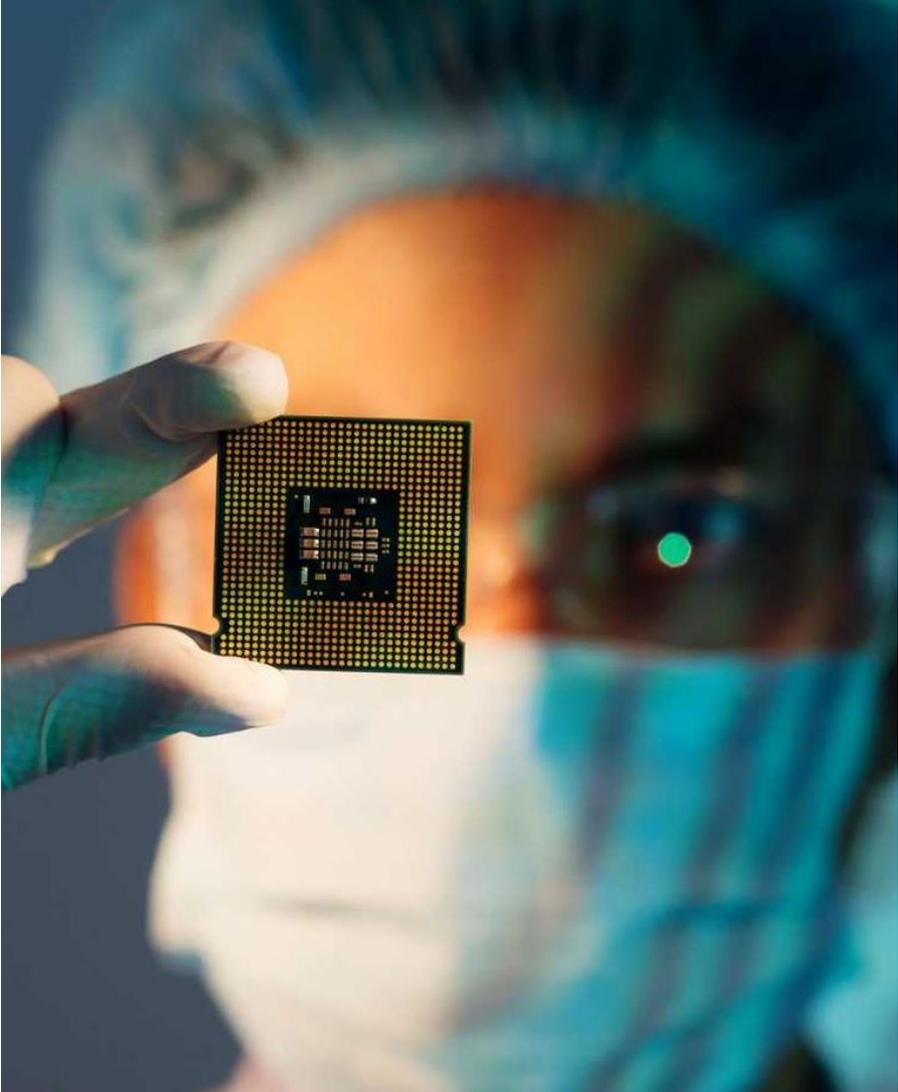
### COMPANY

Aviamaps Ltd is expanding to new countries. We hope to become the de facto digital aviation map platform.

Juha Lindstedt

[juha@aviamaps.com](mailto:juha@aviamaps.com), +358 50 492 4565

[www.aviamaps.com](http://www.aviamaps.com)



## ALD Coating



### OUR SOLUTION

Beneq is the home of Atomic Layer Deposition (ALD). We engineer the tools and material solutions that enable technology mega trends and extend product lifetime. ALD is a thin film technology that enables new and highly competitive products. Today Beneq leads the market with innovative solutions for advanced R&D (TFS 200, R2), flexible high-volume manufacturing (BENEQ Transform™), ultra-fast high precision spatial ALD coatings (C2R), roll-to-roll thin film coating of continuous webs (WCS 600), and specialized batch production for thicker film stacks (P400, P800).

### COMPETITIVE ADVANTAGE

Typical applications of ALD require nanometer-thick, pinhole-free, and totally conformal thin films on different shapes and geometries. With ALD, it is possible to create moisture barriers that are thinner and keep humidity and vapors out better than other hermetic packaging options, which makes it a winning moisture barrier for many industries, especially the semiconductor industry. ALD moisture protection can be applied in different phases of the production process: wafer-level, chip-level, package or module level, and/or assembled PCB level.

### IDEAL CLIENT

ALD is a great moisture barrier for many industries, especially the semiconductor industry. ALD moisture protection can be applied in different phases of the production process: wafer-level, chip-level, package or module level, and/or assembled PCB level.

### COMPANY

Beneq, as the home of ALD, offers a wide portfolio of equipment products and development services. Headquartered in Espoo, Finland, Beneq is dedicated to making ALD technology accessible for researchers and enabling technology mega trends through engineered ALD materials solutions.

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Mia Jokiluhta, Marketing Specialist

[mia.jokiluhta@beneq.com](mailto:mia.jokiluhta@beneq.com), +358 44 709 7434

[www.beneq.com](http://www.beneq.com)



# Game-changing Digital Platform

bluuigo

## OUR SOLUTION

Bluuigo offers ready-to-run digital solutions for industry areas like transport & logistics, manufacturing, maintenance & field services, and warehousing & vendor-managed inventory (VMI). Our solutions are powered by our unique digital platform Tracking Cloud™.

Tracking Cloud™ can gather real-time data from almost any source utilizing a variety of technologies such as IoT, RFID and GPS & Geofencing. The data is combined and enriched with data from existing backend systems (ERPs, CRMs, WMS's, MRPs, PLCs, etc.) creating a transparent, real-time big picture and enabling e.g. Machine Learning-powered process optimization and seamless information sharing with all stakeholders.

## COMPETITIVE ADVANTAGE

Bluuigo's competitive advantage is the end-to-end service package. It combines our world-class technical expertise, ready-to-run software with industry-specific setups, and over 20 years of hands-on experience across numerous industries. Our solutions are always designed with a business-first perspective and offer business decision-makers an opportunity to implement innovations with extremely short time-to-value.

## IDEAL CLIENT

Flow of orders and goods (supply chain tracking and optimization), Intelligent Assets & Services, Vendor Managed Inventory, Spare parts, Equipment&Tracking

## COMPANY

Bluuigo is a Finnish company specialized in creating digital solutions for various industry areas powered by our unique Tracking Cloud platform™ and the latest IoT-technologies, AI and Machine Learning. Our solutions are used in over 25 countries with customers ranging from small- and medium-sized enterprises to some of the biggest listed companies in their respective fields.

Pasi Kurkinen, Sales Director

[pasi.kurkinen@bluuigo.fi](mailto:pasi.kurkinen@bluuigo.fi), +358 45 6481358

<https://bluuigo.fi>

# CAJO

THE ETERNAL TRACE



## Laser marking solutions for demanding use cases

CAJO  
TECHNOLOGIES

### OUR SOLUTION

Cajo Technologies provides market leading laser marking solutions for industrial traceability and product marking purposes. Our solutions are highly optimized for industrial production processes to meet the ever-growing demand of high reliability, quality and production effectiveness.

### COMPETITIVE ADVANTAGE

Cajo's solutions add value by replacing traditional marking methods, such as inkjets, with a very short payback period. Our own software and patented technology enable extremely precise and durable markings on almost any material quickly and cost-effectively.

### IDEAL CLIENT

Brands, manufacturers and related value chains who need to keep up with increasingly complex value chains and constantly evolving regulatory requirements and standards. This creates a strong need for Cajo's laser marking solutions that can comply with the most demanding traceability requirements in the industry.

### COMPANY

We are a fast-growing international company, with our head office and production in Finland, and have delivered our solutions to over 46 countries including several market leaders in Metal, Cable & Wire, Automotive, Aerospace and Marine industries.

Jari Kokkonen

[jari.kokkonen@cajotechnologies.com](mailto:jari.kokkonen@cajotechnologies.com), +358 500 449 449

[www.cajotechnologies.com](http://www.cajotechnologies.com)



## Aircraft Hangar Doors

### OUR SOLUTION

Champion Door rigid frame construction makes them ideal for large-scale exterior door locations such as aircraft hangars, in all sizes from military planes to jumbo jets. A Champion Door hangar door is reliable, long-lasting and does not require much maintenance. It endures heavy-duty industrial wear and its maintenance costs are low. The hangar doors are designed to withstand fluctuations in moisture levels and temperature; they are resistant to dirt, dust and wear, and stand up to even the most violent winds. The PVC material is also designed to resist the chemicals used for de-icing.

### COMPETITIVE ADVANTAGE

Champion Door hangar doors are lightweight but durable. They do not need heavy support structures like many other doors on the market, which significantly helps reduce the construction costs. The large partition-free doorways for hangars and maintenance rooms require doors with special properties. The fabric can be equipped with soundproofing, thermal insulation and burglar protection. Champion Door NK4 Warm hangar door model is the only hangar door on the market with additional thermal insulation. This helps keep down the costs that arise from the hangar heating and cooling.

### IDEAL CLIENT

Our clients in aviation industry are construction companies, aircraft manufacturers, airline companies, airport management companies and MRO companies.

### COMPANY

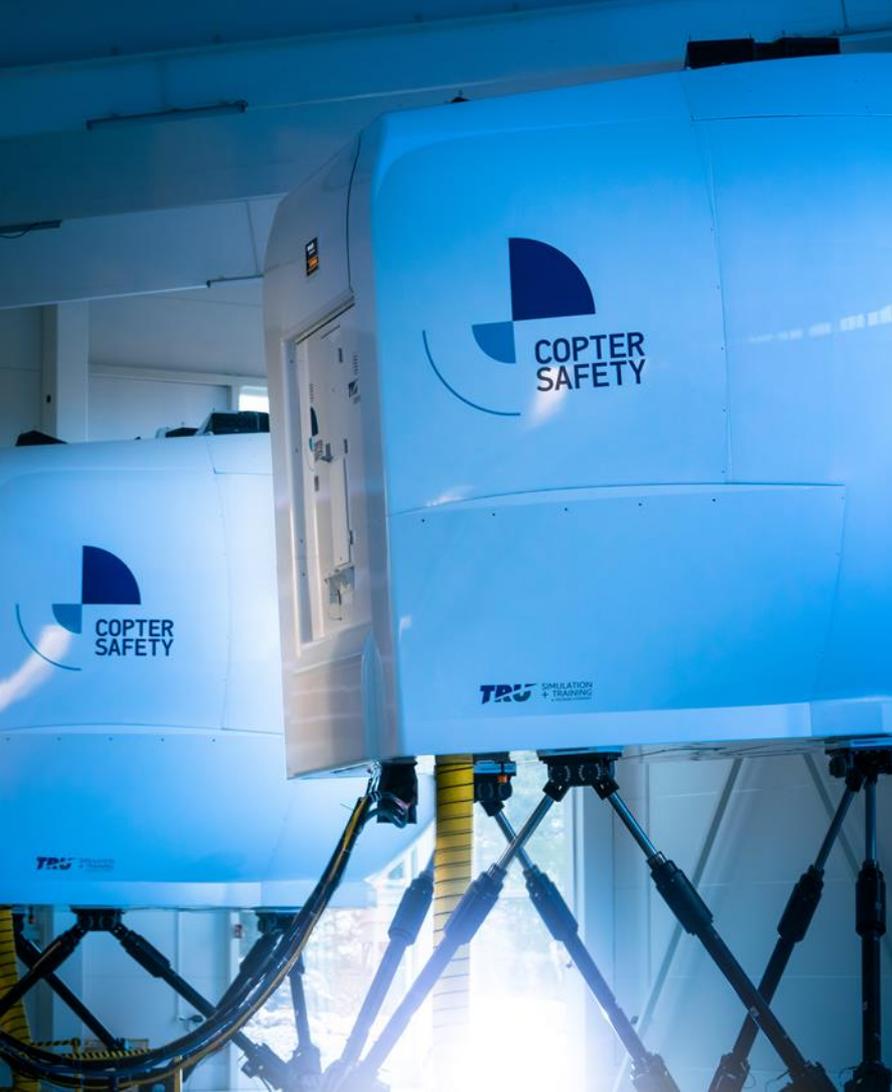
Champion Door is an industrial door manufacturer with a solid experience in international projects. The company's main products include large vertical lifting fabric fold-up doors. All doors are designed and manufactured individually to meet client needs.

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Sami Poutanen, CEO

[sami.poutanen@championdoor.com](mailto:sami.poutanen@championdoor.com), +358 44 526 2456

[www.championdoor.com](http://www.championdoor.com)



# In-and-Out Helicopter Training



## OUR SOLUTION

At Coptersafety, we focus on world-class simulator training. We offer a full range of helicopter training courses on our H125, H145, AW169 and AW139 full flight level-D simulators. We offer a full range of flight and mission training courses as well as tailored training packages for already qualified professional pilots. Training is our only business, our only passion, our only activity.

## COMPETITIVE ADVANTAGE

We are a EASA certified Aviation Training Organization. Our in-house visual modeling team can tailor realistic gaming areas and scenarios based on the real operating environment. And with our Training Base being located only 4 minutes away from Helsinki international airport it is easy to achieve a maximum efficiency in training. The whole training process from briefing to simulator training and debriefing is carried out in our state-of-the-art training base with plenty of room for relaxing and socializing during breaks.

## IDEAL CLIENT

Helicopter operators focusing on highest safety standards. Operators and private pilots specializing in Helicopter Emergency and Medical Services, Search and Rescue, Offshore, Maintenance, Law Enforcement, and Aerial Work professionals.

## COMPANY

Founded by a pilot, for the pilots. Since starting its operations in 2014, Coptersafety grew to be biggest independent simulator training provider in the world and currently serving over 50 helicopter operators worldwide.

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Hannu Marjoniemi - Head of Sales

[hannu.marjoniemi@coptersafety.com](mailto:hannu.marjoniemi@coptersafety.com), +358 50 338 3838

[www.coptersafety.com](http://www.coptersafety.com)

## Comprehensive High-Tech Services



### OUR SOLUTION

DA-Group provides research, development, design, testing, manufacturing and lifecycle management services of advanced electronics. The solutions meet the strictest industrial, defence and space technology quality and safety standards. The design services develop electronics, software, FPGA, signal processing, hardware and mechanics as well as RF and microwave technologies. The production covers clean room, bonding stations, precision mechanics workshops and electronics assembly facilities. The testing facilities enable measuring of EMI, EMC, temperature and vibration tests as well as X-ray.

### COMPETITIVE ADVANTAGE

DA-Group operations are based on a customer-oriented approach and proactive problem solving. The design and implementation services aim to take challenging technical problems and solve them in a simple, functional way. Extensive experience and knowledge of manufacturing processes, DA-Group is a reliable and competent technology partner that can improve the performance of its customers' applications, and thereby, profitability. DA-Group provides the solution from design and manufacturing to testing and life cycle support without a need of extra subcontractors.

### IDEAL CLIENT

Our clients include world leading organizations with a need to outsource to a reliable partner parts of their design, manufacturing or testing. Whether it is a mechanical or electronic component or subsystem, DA-Group provides the solution.

### COMPANY

DA-Group is an independent Finnish corporation providing advanced electronics and high technology solutions and products. DA-Group serves industrial, defence and space industry customers on a global scale.



## The Bright Choice

### OUR SOLUTION

Lighting solutions, luminaries and lighting control solutions.

### COMPETITIVE ADVANTAGE

Long lifetime of the products, wide range of ambient temperature conditions, efficiency of the products. Covering offering with lighting solution tailored for clients' case including controlling devices and solutions. Also the solution for controlling and driver positioning remotely from luminaries is in our offering (e.g. drivers on the bottom of high-mast in tailored electrical cabins).

### IDEAL CLIENT

Client looking for lighting on area lighting e.g. airport, port or other area cases. High ceiling indoor lighting projects with precise lighting condition requirements, e.g. hangars etc.

### COMPANY

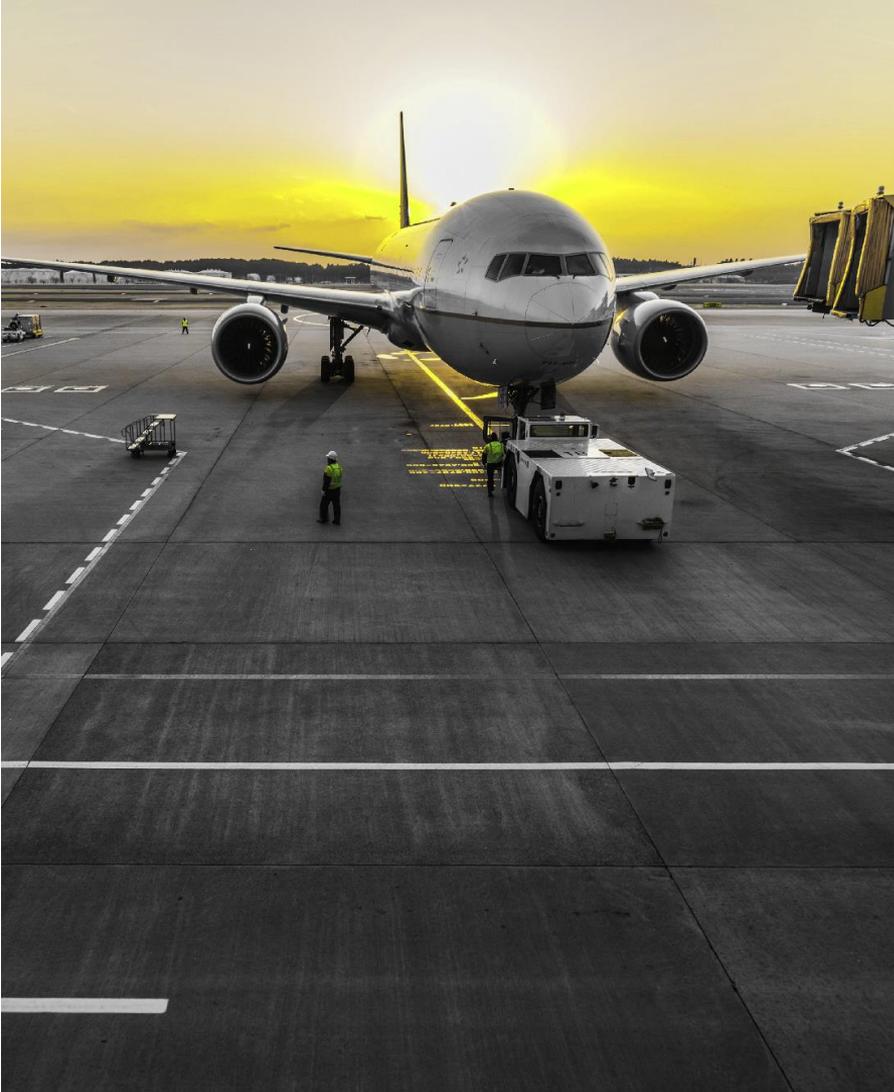
Easy LED is Finnish LED luminary manufacturer offering lighting solutions for bigger project with high masts or high ceiling premises. Our solutions are tailored along customers' needs for cost optimized solution covering clients' needs and precise official requirements.

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Heikki Kasurinen, Director International Sales

[heikki.kasurinen@easyled.fi](mailto:heikki.kasurinen@easyled.fi), +358 40 705 7146

[www.easyled.fi](http://www.easyled.fi)



# Edge Connectivity Solutions Provider Trusted by World-class Enterprises

**EDZCOM**  
a Cellnex company

## OUR SOLUTION

We believe that seamless connectivity of equipment and people in the field is a prerequisite for efficient management of business-critical operations and for accelerating digitalisation of assets-heavy industries. To ensure seamless connectivity, the spectrum needs to be dedicated and network operated on the site - at the edge. We call it Edge Connectivity.

EDZCOM designs, builds and operates Edge Connectivity solutions; private wireless connectivity and communications solutions, seamlessly connecting equipment and people in the field - at the edge.

## COMPETITIVE ADVANTAGE

EDZCOM's solutions are tailored to customer's site, coverage and application requirements. With dedicated spectrum and network infrastructure EDZCOM ensures high-performance and continuity of customer's business-critical communications, while giving customers 100% control, unlike in the case of public networks.

## IDEAL CLIENT

EDZCOM serves enterprises in the logistics, oil & gas, manufacturing and mining industries and the energy generation sector, some of which are working in the most challenging environments and all of which require seamless, tailored connectivity solutions to accelerate digitalisation.

## COMPANY

EDZCOM, a Cellnex company, is the Nordic market leader in Edge Connectivity, currently operating 27 live implementations of Edge Connectivity solutions for world-class enterprises.

Jouko Tuppurainen

[Jouko.Tuppurainen@edzcom.com](mailto:Jouko.Tuppurainen@edzcom.com), +358 40 138 8084

<https://www.edzcom.com>



# Seamless Connectivity in Airfield Lighting



## OUR SOLUTION

We develop, manufacture and sell series isolation transformers, connector kits and prefabricated cable leads for airfield lighting circuit.

## COMPETITIVE ADVANTAGE

Combination of our customer-oriented approach, over molding technology and electrical know-how in airfield ground lighting circuit create superior technology advantage for the industry. EFLA's modern machinery & automated production guarantee constant quality and short lead times with sufficient production capacity. EFLA delivers from Finland to all continents and all products are 100% tested prior to shipping.

## IDEAL CLIENT

Airfield ground lighting system providers. Global, regional and local partners who are participating to related tenders.

## COMPANY

EFLA is the only company in the world specializing in seamless power and communication in Airfield Ground Lighting circuit. The materials and electrical design meet the highest qualifications, since components are installed in underground pits and cans, or buried directly in the ground.

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Sami Heikkinen

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# Clean and efficient power generation



## OUR SOLUTION

Solid oxide cell technology is the most efficient power generation and storage technology available in the world today. The power is generated or stored by electrochemical conversion of the fuel, without internal combustion. The technology enables virtually emission free power generation and storage from natural gas, bio as well as synthetic fuels.

## BENEFITS FOR THE CUSTOMER

Solid oxide cell technology has the potential to reshape how the world is powered, allowing efficient, clean, and reliable off grid energy generation. It can help us sharply reduce our use of polluting fuels, moving from coal to cleaner fuel sources, and eventually to renewably generated hydrogen. The implications are huge for power distribution, for energy bills, and most importantly for the environment.

## COMPETITIVE ADVANTAGE

Due to the unique and patented technology Elcogen products have delivered a world record in fuel conversion efficiency to electricity. Elcogen solid oxide cell stacks use 50% less fuel than conventional distributed power generation technologies such as micro-gas turbines and diesel engines; emit 50% less CO<sub>2</sub> and near-zero NO<sub>x</sub>, SO<sub>x</sub> or VOC.

## COMPANY

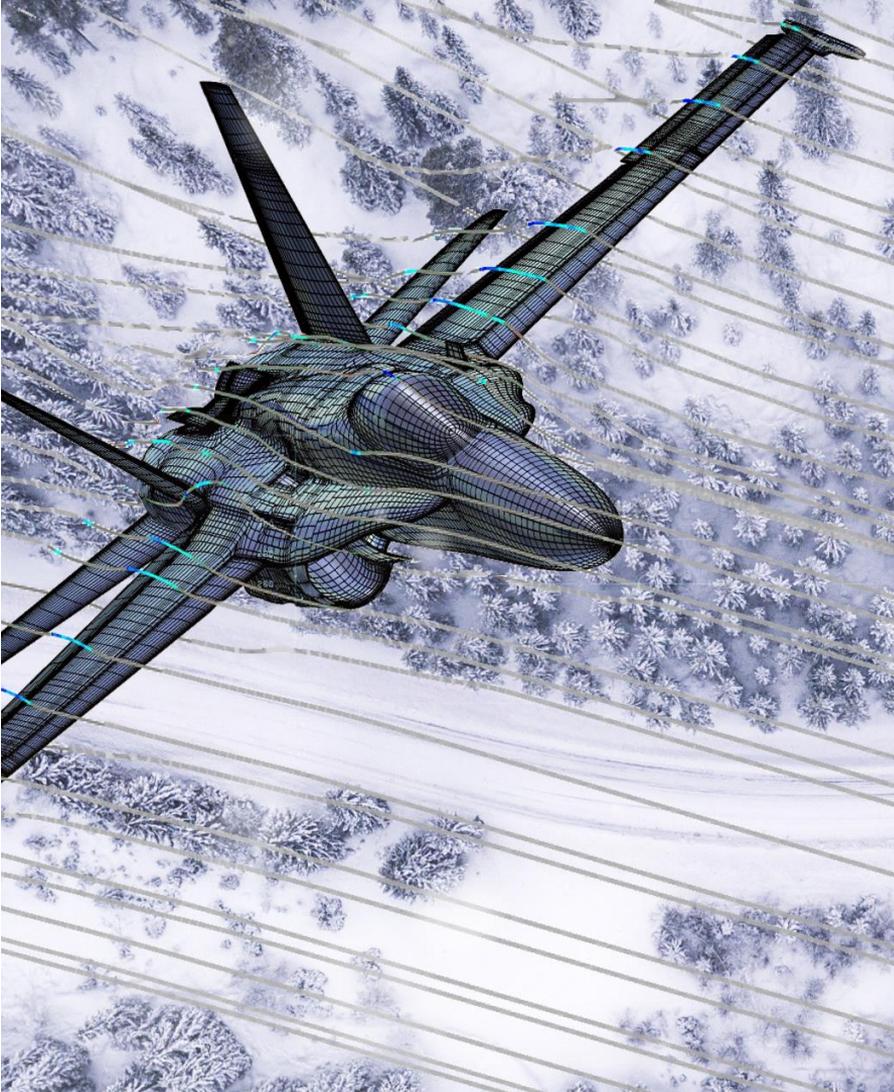
Elcogen is a cleantech company, developing and manufacturing highest performing and most cost-efficient solid oxide cell (SOC) technology for residential, commercial and industrial applications.

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## Engineering Services



### OUR SOLUTION

We deliver design, consulting and engineering services for customers. We are involved in our customers R&D projects, in product design and in production development. Elomatic's aerospace engineers are able to provide comprehensive aerospace solutions from concept design all the way to production and implementation.

Our services include computer aided numerical modelling of physical phenomena related to flow, dynamics, acoustics and structures. Development of modelling methods is essential in order to meet increasingly challenging customer demands.

CADMATIC's digital and intelligent 3D-based engineering software includes tools and solutions for engineering, information management and digital twins for asset lifecycle management using AR/VR and mobile technologies.

### COMPETITIVE ADVANTAGE

We are engineering and consulting professionals and other technical experts that apply our diverse know how to make our customers more successful. We achieve this by delivering superior value throughout the entire life cycles of our customers' products, services and investments. Our mission is to develop top technical know how for our customers' benefit. Our business is improving our customers' competitiveness.

### IDEAL CLIENT

Our customer has a need to develop their engineering process most effective way with services like laser scanning, 3D modelling, CFD and FEM tools, visualization and virtual environments. We are able to combine total benefits of digital engineering process.

### COMPANY

Elomatic is a consulting and engineering company with 1100 engineering professionals. We operate on a global basis. We are a leading supplier of Industrial engineering and consulting services.

CADMATIC offers unique software solutions for engineering project review and communication, as well as digital twins for asset lifecycle management using conventional, AR/VR and mobile technologies. CADMATIC is part of Elomatic Group.

Risto Kallinen

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# Engineering with a difference.



## OUR SOLUTION

Etteplan is a forerunner in the engineering industry, particularly due to our service solutions and innovative attitude which enables customer to utilize latest technology and benefit in projects, e.g. 3D printing, Digital twin simulations, e-learning, advanced testing laboratory facilities, wireless connectivity solutions, few areas to mention. The key objective of Etteplan strategy is to create solutions, which leads to higher value for our customer and support them in the industrial transformation. Etteplan is a member of AFDA (Association of Finnish Defence and Aerospace Industries).

## COMPETITIVE ADVANTAGE

The three key elements of our strategy are Customer value, Service solutions and Success with people. We develop the Company through development programs linked to each of these elements.

## IDEAL CLIENT

Etteplan's customers are industrial companies, with several global megatrends influencing the development of their operating environment at present. Our ambition is to drive the industrial change, grow and explore together with our customers. Our customers' success is our success.

## COMPANY

Etteplan is one the leading providers of engineering, software and embedded, and technical documentation solutions in the Nordics. In 2020, our revenue was EUR 260 million. We have over 3400 professionals in Finland, Sweden, Central Europe and China. Etteplan's shares are listed on Nasdaq Helsinki.

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## Finnair Technical Services

**Stronger Towards Future Travels**

### OUR SOLUTION

Finnair Technical Services provides high quality aircraft and component maintenance at Helsinki-Vantaa airport. We are continuously working to improve the additional value for our customer. We work to produce the highest level of flight safety at competitive costs. Combining our almost 100 years of experience we are ready to offer this available for your needs.

### COMPETITIVE ADVANTAGE

Finnair Technical Services has a long and solid history on airframe and component maintenance and related services. Our component shops utilize modern equipment and efficient processes on a selected portfolio. We hold an EASA Design (DOA) & Production organization (POA) approvals as well as Technical training (PART-147) approval and are able to offer services on all these.

### IDEAL CLIENT

We're ready to assist any client who needs certified service provider on component support (limited), line maintenance, engineering services and consulting services on technical services in aviation.

### COMPANY

Finnair Technical Services performs line maintenance and component repairs for Airbus (A320, A330 and A350), Embraer 190 and ATR aircraft types. As a part of Finnair group we share the same values; Courage, Simplicity, Commitment to Care and Working Together. We employ more than 800 aircraft maintenance experts.

# Cleaning and FPI Solutions

## OUR SOLUTION

FinnSonic designs and manufactures solutions for demanding cleaning and fluorescent penetrant inspection (FPI) both for manufacturing and MRO industries. Thanks to the smart technical solutions, equipment reliability and customer-oriented technical support, FinnSonic has gained the position as a trusted partner among the world's leading aviation companies.

## COMPETITIVE ADVANTAGE

**ONE PARTNER IS ENOUGH** - Streamlined function of cleaning and FPI; one experienced partner. **IMPROVED PROCESS QUALITY** - Automatic processing with data logging; traceability of batches; minimized risk of human error, less reprocessing; superior cleaning thanks to ultrasonics; automatic vision systems. **SUPERIOR COST EFFICIENCY** - Water consumption minimized with smart recycling; energy saving line control; cost savings thanks to reduced operator involvement; efficient use of floor space. **PEACE OF MIND** - Equipment is built to last; ingenious encrypted remote support; smart technical support.

## IDEAL CLIENT

Companies that manufacture and service aerospace components, such as jet engine parts, landing gear parts, wheel and brake parts and fuselages.

Manufacturers of developed metal and high-technology parts. Customers' that seek improved quality and production with help of advanced automation.

## COMPANY

FinnSonic offers intelligent, safe and cost-effective solutions for demanding parts cleaning and NDT inspection needs. FinnSonic has served its well-known and successful customers worldwide for 40 years. Our products and systems are being used in more than 30 countries.



Jari Mäkipää

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# Operator software for Autonomous Flying Vehicles, Operations and Research

## OUR SOLUTION

Fleet management / Ground control systems for autonomous flying vehicles.

## COMPETITIVE ADVANTAGE

Proven capability to manage autonomous operations in any point to any point operations in highly complex and varied environments (including urban) across the World. We have been measurably faster, more flexible and safer operations platform to our competition. Simulation first approach where we can test, simulate, verify and develop operations exactly the same way we operate in real environment.

## IDEAL CLIENT

Our ideal client is an operator of fleet of autonomous flying vehicles or service provider for those operators. Also, we provide services to research institutions for art of possible research of the ecosystem.

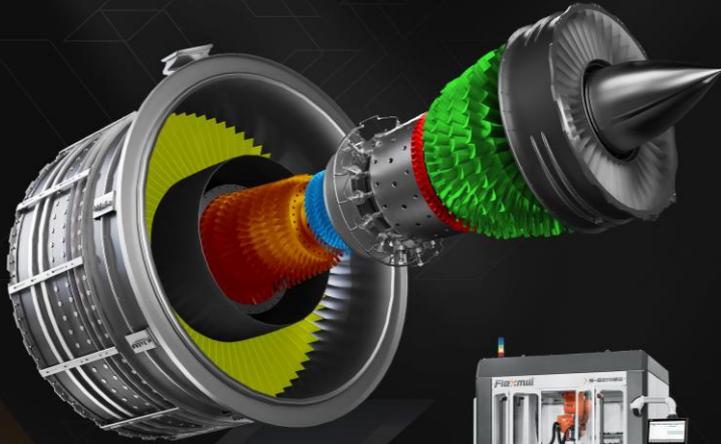
## COMPANY

Fleetonomy.ai Oy develops solutions to manage autonomous vehicle operations in the most complex environments.



## SURFACE FINISHING SOLUTIONS FOR STRUCTURAL AND ROTARY COMPONENTS OF JET ENGINES

Linishing    Polishing    Grinding and deburring    Laser and dot peen marking



### For blades, vanes, blisk and disks of:

LPC Low pressure compressor  
HPC High pressure compressor  
HPT High pressure turbine  
LPT Low pressure turbine  
Fan Segment

Front fan case  
Rear fan case  
Low pressure compressor case  
High pressure compressor case  
Combustor frame  
High pressure turbine case  
Low pressure turbine case  
Turbine exhaust case  
Compressor intermediate case  
Turbine intermediate case



## Surface Finishing Solutions



### OUR SOLUTION

Flexmill specializes in demanding surface finishing applications (polishing, deburring, grinding, laser marking, etc.) that increase customer productivity and product quality, lower the production cost and improve occupational safety and health.

### COMPETITIVE ADVANTAGE

Flexmill offers solutions for a wide range of different applications in both dry or wet processing environments. Flexmill is constantly developing tool technologies, process modules and methodologies, many of which are patented. The Flexmill philosophy is to partner with the customer to develop and demonstrate state-of-the-art manufacturing solutions for complex and demanding manufacturing processes.

### IDEAL CLIENT

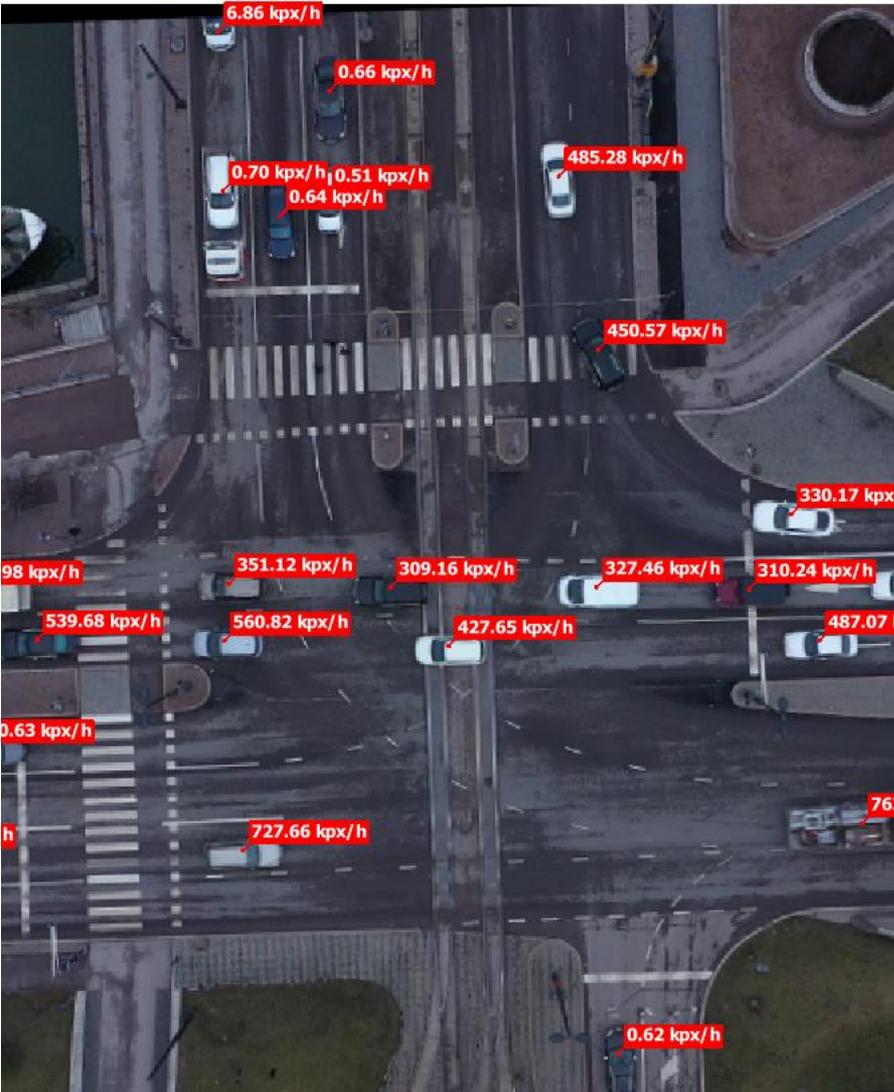
Companies that manufacture complex components and would like to automate their manual manufacturing processes, increase product quality, reduce production cost, and improve employee safety and health. Companies who producing the jet engine parts, landing gears or any prismatic components.

### COMPANY

Flexmill is an international high-tech growth company providing intelligent and adaptive surface finishing solutions for the aerospace, automotive, energy and marine industries serving some of the world's largest companies.

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# Drone Service Provider



## OUR SOLUTION

AI inspections. Photogrammetry Data Consultancy and advisors.

## COMPETITIVE ADVANTAGE

We are The Fly-By Guys. We fly, we deliver, and our customers know what they get. Our emphasis is on safety, as well as delivering.

## IDEAL CLIENT

Mobile operators. Municipalities. Private industries. Transport data gathering sectors.

## COMPANY

We offer everything from guidance, planning and executing the aerial footage to the postproduction of video and flight data. We leverage AI & ML to extract as much data from the video content, enabling our clients to make smarter business decisions.

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Stephen Sutton

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<https://www.flybyguy.fi>



## Rest is More

### OUR SOLUTION

GoSleep is the original sleeping pod in the market. Concept will improve your passenger experience levels and monetize non-commercial areas.

### COMPETITIVE ADVANTAGE

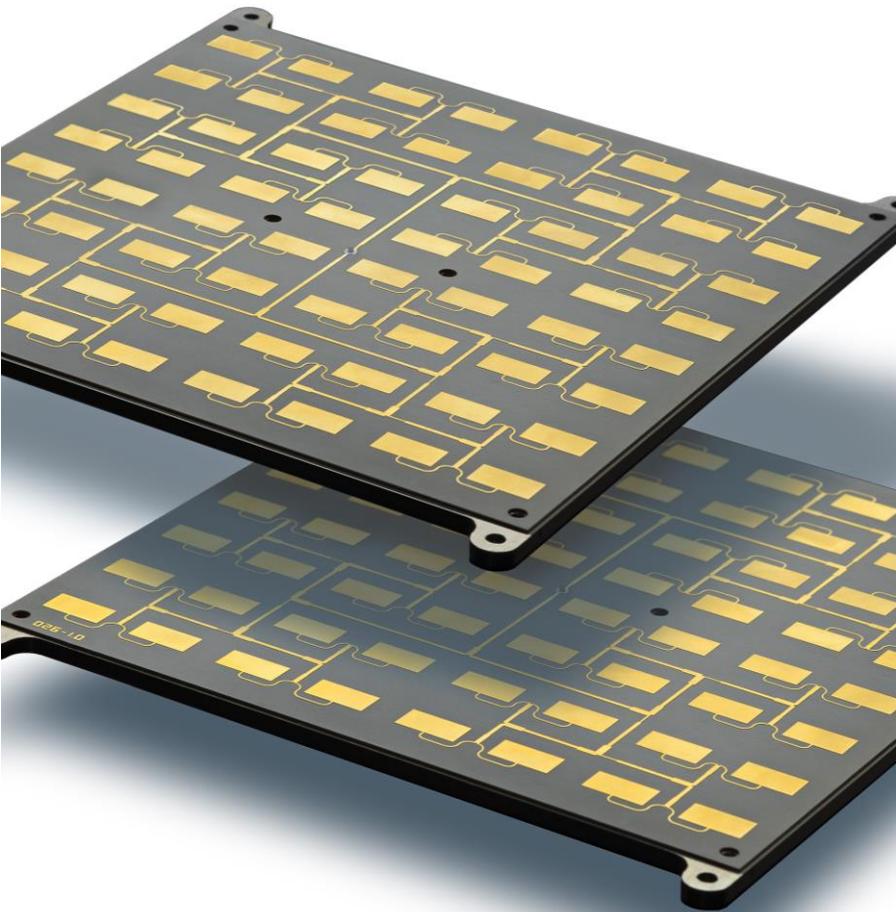
We are making a unique product that allows short rest.

### IDEAL CLIENT

For all tired passengers as well as privacy seekers.

### COMPANY

Be the leading producer in the sleep pod market.



# HARP TECHNOLOGIES



## OUR SOLUTION

Harp Technologies provides technology and R&D services in RF and microwave engineering, especially for radar instruments, RF & microwave subsystems, and antennas. Complementary design services in embedded electronics, software, and mechanical design are provided as well. Harp Technologies is your reliable partner in developing airport security and surveillance systems. Our work is characterized by innovation, flexibility, and high quality, as well as schedule and cost control.

## COMPETITIVE ADVANTAGE

Harp Technologies provides state-of-the-art expertise and innovative technology in RF and microwave that cover the full chain from air-antenna interface to delivery of microwave sensor data. We are used to work with the most demanding customer specifications.

## IDEAL CLIENT

Our customers include system integrators, sub-system suppliers, and product developers, ranging from SMEs to global, publicly listed corporations.

## COMPANY

Harp Technologies is a privately owned SME company specializing in RF and microwave technology. The company was founded in 2007 and we are located in Espoo, Finland, in the Helsinki capital region. We employ 10+ professionals and have 1-2 M€ turnover.

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Janne Lahtinen

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# Aerodrome for Future Aviation

**Helsinki-East**  
AERODROME

## OUR SOLUTION

Smart digital aerodrome.

Hub for future air traffic.

Innovation alliance.

North-European R&D Center.

Technology park.

## COMPETITIVE ADVANTAGE

We want to be in the leading edge developing future Aerodrome solutions. Helsinki-East will have satellite based instrument approach procedures. Electric aviation and drones will revolutionize usage of aviation. Future Aviation Center "LIFT" will form a network of aviation professionals and will provide testing facilities, aviation services, workspace and co-operation to all members of the community.

## IDEAL CLIENT

Professional GA organisation having their hub in Finland.

Organisation interested in developing and testing future aviation solutions.

Pilot training organisation.

Logistics or manufacturing company which benefits from the adjacent aerodrome.

## COMPANY

Helsinki-East is a new Aerodrome developed and managed by Redstone AERO, owned by aviation industry and professionals. Main focus is to provide services for professional GA and future air traffic. LIFT innovation center for developing future aviation solutions will be big part of operations.

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## Beyond Tomorrow

### OUR SOLUTION

Our core is the creation of infrastructures connecting physical and digital worlds, driving further the future of smart devices and embedded systems. We have been paving the way to connecting hardware, software and data across air, sea and land for more than 30 years. Our more than 400 employees dedicate their daily duties on deep understanding of transforming big data generated by hundreds of thousands of devices into even bigger opportunities in the cloud.

### COMPETITIVE ADVANTAGE

We are used to working with customers in a wide range of operating fields and constantly collect data on the development trends in various fields. Thanks to our extensive experience, we have insight in various operating fields and are able to combine experience in one field with another. We are known for our problem-solving skills, especially in the industrial, space, healthcare, and national defence sectors.

### IDEAL CLIENT

We create success stories from opportunities where the physical and the digital world meet. Business solutions of the future, the digital transformation, and product and software development are at the core of our expertise. Our work always originates from customer needs.

### COMPANY

We bring more intelligence to our customers business – and to the entire world. We make the impossible happen by combining our problem solvers with the needs of the future, by linking the physical with the digital, and by bridging the gap between today and tomorrow.



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# Runoff Water Treatment in Airfields



## OUR SOLUTION

Runway deicing fluids and aircraft anti-icing are of crucial importance for aviation safety. Another important function at airfields is the training of firefighting. Yet all these produce runoff waters which – without proper cleaning – form a risk to groundwater and surface water quality.

Anti- and de-icing fluids contain glycol which is an organic and naturally biodegradable compound. The downside is, however, that glycol, when degrading, consumes a large amount of oxygen and causes unwanted phenomena in ecosystems. Depending on its source, firewater runoff contains a variety of chemicals, petroleum products, dissolved contaminants, and fine suspended solids – a cocktail nobody wishes to find in nature. To fight such a scenario, the company BK-Hydrometa Oy has introduced EFFE® GX water treatment plant for cleaning polluted runoff from airfields and firefighting exercise areas.

## COMPETITIVE ADVANTAGE

The ETV -verified (Environmental Technology Verification) EFFE® GX water treatment system is scalable, tailored to the customer's needs and adjusted to the quality of water. EFFE® features a low investment cost, high-quality devices, and compact design. EFFE® GX operates year-round, also in northern conditions. It reduces odour, diminishes pollutant load, and comes as a turnkey delivery including the plant, commissioning, and testing. The either remotely or locally controlled plant operation is autonomous and self-scalable to suit varying water flow volumes.

## IDEAL CLIENT

The EFFE® GX system is ideal for military and civilian airfields, governmental and commercial customers, mining industry, rescue services, environmental authorities, and R&D sector. To overcome challenges in water safety as well as in the environmental monitoring sector, BK-Hydrometa Oy is there to assist the customers.

## COMPANY

BK-Hydrometa is a privately owned company, founded in 2011. With ten years of experience, we deliver runoff water treatment consultancy and treatment plants to our customers. Within the technology scope of Water Treatment and Monitoring, BK-Hydrometa Oy received the Statement of Environmental Technology Verification (ETV) from the European Union in 2019 as the first company in Finland. The verified technology\* is for airport runoff and perched water treatment with the EFFE® GX method.

Anita Salo, CEO

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## #LupaLuottoa



### OUR SOLUTION

Our aviation services cover the entire life cycle of aviation equipment and systems, from research and product development to maintenance, repair and overhaul. The Finnish Defence Forces, security authorities and civil aviators trust our expertise. In addition to manned aviation, Insta expertise covers unmanned aviation systems.

### COMPETITIVE ADVANTAGE

We have worked in aviation since 1970s and we are known for in-depth expertise, innovation and uncompromised quality. Our customers can count on the reliability of their systems in all circumstances.

### IDEAL CLIENT

Insta builds long-term partnerships that enable deep collaboration and continuous improvement of customer value. Some of our products and services are designed to fit specific customer needs.

### COMPANY

Insta Group Oy is an expert in industrial automation, industrial digitalisation, cyber security and defence technologies that helps its customers develop and maintain their performance and profitability.

Insta is a Finnish family business that serves customers in demanding fields by providing them with innovative technology and service solutions.

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## Ultra Sensitive Chemical Threat Detection

### OUR SOLUTION

Screening air cargo for explosives threats made easy following the regulatory European Civil Aviation Conference (ECAC) Explosives Vapour Detection standard. Collect air from gaps in cargo using the hand-held sampler. Insert the filters into the analyser for fully automated analysis. Clear cargo of up to truck size at one time.

### COMPETITIVE ADVANTAGE

Karsa's ultra-sensitive chemical threat detection technology is typically 1000 to 1 million times more sensitive than current methods. It enables disruptive, simplified operations for threat detection where high performance boosts operational benefits.

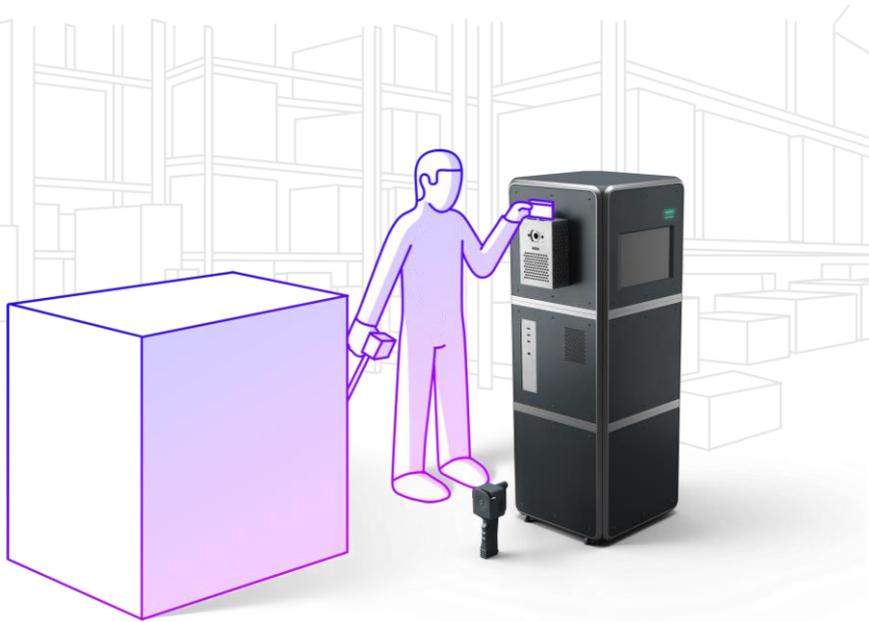
### IDEAL CLIENT

Air Cargo Services Companies - Airlines - Aviation Security Services Companies - Homeland Security & Civil Protection Agencies

### COMPANY

Karsa Oy is developing chemical threat detection equipment with high sensitivity and specificity to provide dramatically increased detection capabilities at lower costs than current technologies. Bringing this technology to the global market place is expected to transform the security industry with options that will raise the level of security in markets including civil aviation, beginning with air cargo screening. Karsa's technology also has application for customs and border protection as well as emergency management.

Karsa Oy was founded in 2016 by a team of sampling and detection experts from the University of Helsinki, international industry partners and a leading venture capital investor in Finland, and with the support of Business Finland, the Finnish Funding Agency for Innovation.





# Mechanical Components for Aerospace industry

## OUR SOLUTION

Keymet specializes in manufacturing of mechanical components for the electronic, medical and aerospace industry.

## COMPETITIVE ADVANTAGE

With 20 years of experience and the most modern machinery for sheet metal and machining production we are able to produce within a broad range of the aerospace industry.

As a small company we are flexible and able to meet the needs of our customers. With our own painting and marking stations we form a long value chain that enables us to control the quality.

## IDEAL CLIENT

Ideal clients for Keymet are global companies in the EMS, Medical and Aerospace industries.

Our customers produce products for highly advanced aerospace systems such as electrical flightbags, wi-fi receivers and components for communication and navigation. Keymet produces the mechanical components to these products.

## COMPANY

Keymet is a privately owned company located in Ostrobothnia, Finland.

The company is highly specialized in complex mechanical components of aluminum with aerospace industry as the main market.



# Shelter in All Locations



## OUR SOLUTION

KT-Shelter is a large-scale, robust weather shelter for demanding climates, designed for the requirements of defence, crisis management and industry. KT-shelter offers turn-key sheltering solutions with purchase, rent or lease options that can include logistics, assembly, disassembly and maintenance services.

## COMPETITIVE ADVANTAGE

Due to patented innovations, the Shelters can be rapidly deployed, assembled and disassembled without the need for scaffolding, cranes or groundwork. The shelters are designed to withstand extreme weather conditions.

## IDEAL CLIENT

\* Defence ground services \* Worldwide Crisis management \* Humanitarian aid services \* Industry services

## COMPANY

KT-Shelter designs, manufactures and delivers large-scale sheltering products and services. With patented innovations KT-shelter focuses on Mobility, Turn-key services and Extreme durability for Defence, Crises management and Industrial sheltering needs.

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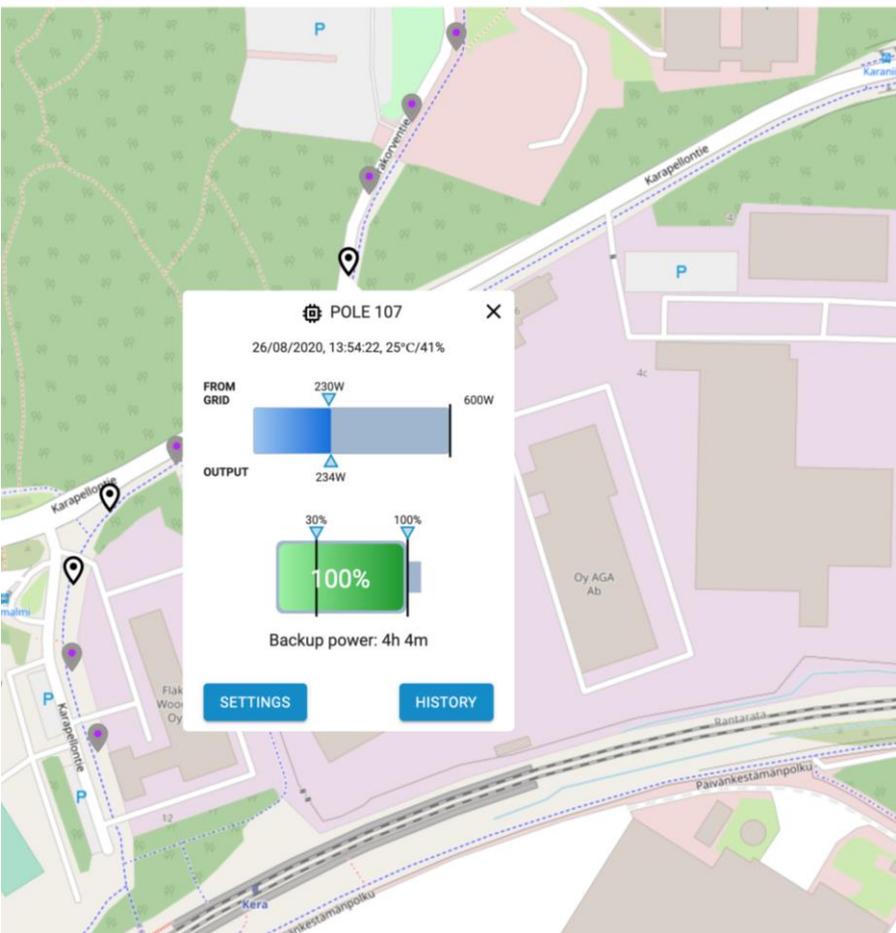
Tommi Kasanen

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[www.kt-shelter.com](http://www.kt-shelter.com)

Show active devices within

0.5 min 5 min 15 min 1 hour 6 hours 1 day



# Battery and Power Electronics System

## OUR SOLUTION

L7 Drive has developed a novel power electronics system that can utilize a very low voltage parallel connected Li-ion battery pack (3,2 – 3,6V) to power electric vehicles and devices up to 48V and 8kW. It is the only battery system in the world that can safely and reliably operate a Li-ion battery pack without BMS, extending the lifetime of the battery and keeping it in perfect balance. Our technology can be utilised in multiple ways from electric mobility to power back-up and VPP systems. The cloud-based services guarantee that you are always up to date and in control of your solution.

## COMPETITIVE ADVANTAGE

L7 Drive battery and power electronics system can extend the lifetime of your Li-ion battery solution and make it safer than anything else on the market. Our patented DC-DC conversion technology uses fewer components making it lighter, more efficient and more compact than other bi-directional voltage conversion technologies.

## IDEAL CLIENT

Any company that aspires to solve their backup power or battery electric motor drive requirements the most advanced and sustainable way possible. Anyone who needs to be in total control of their battery systems in real time and optimize their energy usage.

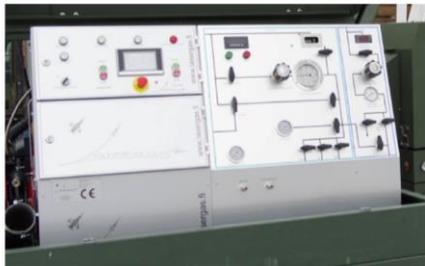
## COMPANY

L7 Drive Ltd. is a clean technology company designing and engineering leading edge smart energy subsystem technologies. L7 Drive's core is an innovative power electronics technology that can be employed in a wide variety of electric powered platforms.

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# SGS

ISO 9001  
AQAP-2110



## Nitrogen and Oxygen Generators

### OUR SOLUTION

Laser Gas designs and manufactures gas generators for military and civilian purposes. All our generators can be tailored to match any industry's needs and always include our life cycle support service.

Laser Gas manufactures oxygen and nitrogen generators and controlled atmosphere systems based on Pressure Swing Adsorption (PSA) or membrane technology. Extracting oxygen or nitrogen directly from the air, Laser Gas compact on-site systems are a cost-effective alternative compared to pressurized cylinder gas in many applications. The nitrogen generator can achieve a maximum purity of 99.9999%, which is the highest possible.

### COMPETITIVE ADVANTAGE

Our service includes everything from gas generation system designing to its life-time maintenance. Besides buying, long and short-term rental with or without the option to purchase is also available. Our gas equipment enables our customers to eliminate their dependence on external gas suppliers while reducing costs drastically. Purity achieved with our generators is highest possible.

### IDEAL CLIENT

Any military and civilian organizations which willing to generate their nitrogen and oxygen on demand wherever and whenever needed without dependence on third-party supplier. Customers who facing logistical problems, delivery uncertainties and risks associated with high pressure tanks.

### COMPANY

Laser Gas Oy designs and manufactures nitrogen and oxygen generation systems for military and civilian purposes. Our gas equipment enables our customers to eliminate their dependence on external gas suppliers while reducing costs drastically. With our tailor-made generators, both gases are produced from ambient air in such a way that the high purity and reliability requirements of even the most demanding applications can be met.

Rami Hakala, President

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# Disruptive Electric Aircraft Delivery systems



## OUR SOLUTION

Our system will reduce the overall delivery costs of daily mail and packages in the countryside significantly. These savings enable companies to offer a higher level of service. Customers will get their newspapers and packages in their backyards and newspapers will be read more often with morning coffee. Most importantly, our aircraft can reduce the carbon footprint of countryside last mile deliveries by 30%.

## COMPETITIVE ADVANTAGE

Our patent applications are related to the thrust vector control of our twin motor aircraft and the operation of its cargo space. We were granted our first patent from the USA in 2020.

Due to the unique structure solutions our aircraft is probably the cheapest, the greenest and the fastest method in the world to deliver a small package from point to point within 50 km distance.

## IDEAL CLIENT

We are currently piloting with the biggest Finnish media groups. Our goal is to deliver everyday mail and online store packages especially on rural areas of the world and capture a significant market share of all last mile deliveries.

## COMPANY

We began to build our first aircraft in a garage in Lentola, Kangasala in 2016. Two domestic investors got interested in the project during the following year and Lentola Logistics Oy was established. Already in 2018 we managed to execute the first successful transition from hovering to horizontal flight. We have kept the momentum going as we performed the first automated deliveries in 2020.

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Markus Hohenthal

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# Rugged and Transparent Displays

**LUMINEQ**<sup>®</sup>

DISPLAYS BY **BENEQ**

## OUR SOLUTION

LUMINEQ displays have been serving transportation applications in extreme conditions for the past 30 years. LUMINEQ is renowned for its Rugged Display product line for the world's most demanding conditions. We manufacture displays for some of the largest aircraft manufacturers in the world, including Airbuses A350 displays to be used outside the aircraft for water management systems.

Due to their unique characteristics, LUMINEQ<sup>®</sup> displays are ideal for aircraft applications, where operational safety and passenger experience are of paramount importance. They are the world's most durable displays.

The same rugged technology is utilized in our innovative transparent displays. Increased situational awareness, safety and ergonomics can be achieved by laminating the display to a glass surface of an aircraft.

## COMPETITIVE ADVANTAGE

The LUMINEQ<sup>®</sup> Rugged Electroluminescent Displays tolerate extreme conditions such as altitude, cold, pressure, shock, and vibrations better than any other display type. Our displays have a lifetime of over 20 years and operating temperature ranges from -60 °C to +105 °C, with instant pixel response regardless of temperature. They are tested and specified to comply with High Altitude standard: IEC 60068-2-13, operating at 18 km.

LUMINEQ transparent displays with 85% of transparency can be laminated in glass to show information in the line of sight of the pilots. Our touch technology enables futuristic applications and premium passenger experience by turning aircraft windows into interactive displays.

## IDEAL CLIENT

Any aircraft display application where reliability and ruggedness are of paramount importance. Our clients can be aircraft manufacturers, glass laminators or an aircraft OEM looking to integrate a durable display into an aircraft.

## COMPANY

Beneq<sup>®</sup> is the home of ALD and LUMINEQ displays. Beneq is a leading supplier of ALD technology and LUMINEQ thin film electroluminescent displays enabled by ALD.

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[www.lumineq.com](http://www.lumineq.com)



# Protecting People, Property and Business Continuity



## OUR SOLUTION

HI-FOG® water mist fire systems are implemented for various applications at airport, air control towers and engine test cells in the aviation industry. Airport facilities like terminal halls, data processing rooms, and service and maintenance areas can be fire protected with HI-FOG.

Our HI-FOG systems use significantly less water than conventional systems and without any additives. Combined with water mist significant suppression capability and rapid activation by quick response of HI-FOG sprinklers, customer gets an effective and safe firefighting solution.

## COMPETITIVE ADVANTAGE

Being a pioneer in the water mist firefighting industry, HI-FOG® systems comply with relevant regulations. Marioff holds a large amount of type-approval certificates.

HI-FOG systems can considerably reduce damages, and as a result provide our customers cost savings and reduced downtime for business operations.

The wide network of HI-FOG trained specialists ensure professional services for our customers to keep their system fully operational and upgraded throughout its entire lifetime.

## IDEAL CLIENT

Marioff offers its HI-FOG® solutions and services to various building, marine and industrial customers.

## COMPANY

Marioff is a leading pioneer of high pressure water mist fire protection, supplying HI-FOG® solutions worldwide.

Marioff is a Carrier company, a leading global provider of innovative heating, ventilating and air conditioning (HVAC), refrigeration, fire, security and building automation technologies.

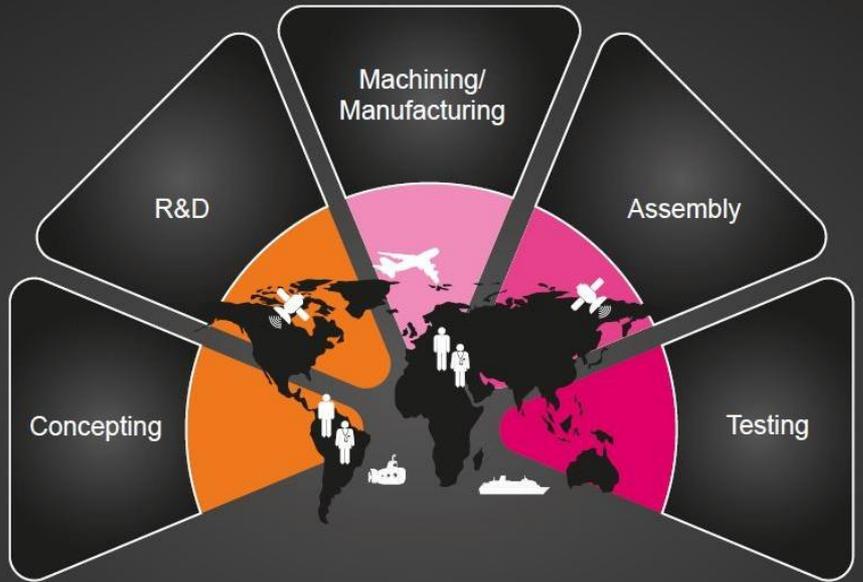
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<https://www.marioff.com/>

## Your Partner in Engineering and Manufacturing



### OUR SOLUTION

Mectalent designs and manufactures demanding components for its customers. Our competence is in precision mechanics, machining and assembly. Our operation is based on accuracy, high competence and customer-oriented attitude. Experts at our design office covers your needs in Mechanical-, Concept-, Product-, Hardware-, optical-, Embedded software and software design. Our manufacturing takes care of your machining, assembly and testing needs with absolute precision.

### COMPETITIVE ADVANTAGE

Mectalent's team of experts help you find the optimal solutions for the most demanding challenges. Mectalent offers its customers the unique ability to design and manufacture entities and produce solutions that others simply cannot. Mectalent has a proven track record as a trusted expert who provides solutions for even the most demanding customer needs.

### IDEAL CLIENT

Innovative company with lots of new products and bright R&D. Needs machined components or assemblies from a partner.

### COMPANY

Mectalent is a top expert in component manufacturing and precision mechanics. Our main focus is on defence/aviation, new technology and medical industry. Key Figures: Net sales: 11,7 M€ Personnel: 90 Exports: 23%.

Joonas Pöyry

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## From Plan to Solution



### OUR SOLUTION

Milectria manufactures electrical systems for demanding operating conditions. Our product range include wiring harnesses, cable harnesses, electrical panels, and other electromechanical assemblies.

Wire harnesses are produced according to customer specifications. We are capable of handling special requirements established by EMC and other challenging operating conditions in the cable manufacturing. Military class electrical panels are produced for various applications. Our range extends from EMC-protected customized electrical panels to mass-produced electrical panels. Our products are always tested prior delivery to the customer. An electrical testing environment can be built for efficient and high-quality verification of the functionality of mass-produced electrical panels.

### COMPETITIVE ADVANTAGE

We believe that best solutions are made with strong partnership. Our key words are Partnership, Flexibility, Traceability, Customer Orientation and Top Quality.

### IDEAL CLIENT

We are willing to widen our worldwide satisfied clientele with a company that needs high quality electrical systems, from basic wiring harnesses to complex electromechanical assemblies.

### COMPANY

Milectria operates in Finland, Estonia and United Arab Emirates. Company is established in 2004 and it is privately owned. Currently Milectria employs 200 people and has worldwide clientele with highly regarded reference companies.

Ville Männistö

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# Forest Inventory Services from Your Own Data

## OUR SOLUTION

MosaicMill has developed drone-based tree wise forest inventory where no traditional field measurements are required - applying our novel methodology each tree is located and measured. MosaicMill inventory method is applicable for both plantations and managed natural forest. MosaicMill service is cloud based and MosaicMill can apply clients' own drone flights. Both LiDAR data and camera data can be processed.

## COMPETITIVE ADVANTAGE

MosaicMill method does not require any traditional field work, all measurements are done with the aid of aerial images or LiDAR point cloud. Compared to other forest cloud services MosaicMill is the only one providing tree wise measurements.

## IDEAL CLIENT

Forest or plantation organization with regular need for accurate inventory data. Optimum situation would be if organization has own drone fleet or an outsourced local flight supplier.

## COMPANY

MosaicMill Ltd is Finland based technology company established in 2009. The company is one of the leading companies applying drone data in forestry and new methodology enables forestry planning without traditional field work.

Ismo Hippi

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# Runway Maintenance



## OUR SOLUTION

Runway friction tester (CFME = Continuous Friction Measuring Equipment) Global Runway Reporter = Software solution for runway inspection and generating Runway Condition Report and SNOWTAM

## COMPETITIVE ADVANTAGE

We provide expertise that others can't. We know the whole process of runway inspection and maintenance and we provide the necessary tools for this need. As a software and product manufacturer we are high quality and provide excellent service and after sales.

## IDEAL CLIENT

Big airport with harsh winter conditions. We can provide excellent tools for these conditions where our competitors fail with quality and expertise. Still, our products suits to all airports around the world: everyone needs to measure friction and report runway conditions.

## COMPANY

Moventor - Makes Every Runway Safer Moventor is international high quality manufacturing company from Finland. We are customer oriented and aim for long term relationships. We serve customers in nearly 60 countries around the world and try to make aviation safer runway by runway.

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Mikko Kallio

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## Sustainable Aviation Fuel

### OUR SOLUTION

Neste's sustainable aviation fuel is a drop-in solution that is readily available and in commercial use. Neste MY Renewable Jet Fuel is produced from renewable waste and residue raw materials, providing an immediate solution for reducing the direct carbon emissions of flying. Over the lifecycle, the fuel in neat form reduces GHG emissions by up to 80% compared to fossil jet. It is fully compatible with existing jet engine technology and fuel distribution infrastructure when blended with fossil jet. The current production capacity is 100,000 ton/a and planned to exceed 1 million ton/a in 2022.

### COMPETITIVE ADVANTAGE

Neste is the world's largest producer of renewable diesel and sustainable aviation fuel refined from waste and residues, introducing renewable solutions also to polymers and chemicals industries. Neste is ranked as one of the world's most sustainable companies with the aim to become a global leader in renewable and circular solutions. Neste is committed to support customers to reduce their GHG emissions by at least 20 million ton/a CO<sub>2</sub> by 2030. Neste started commercial sales of SAF in 2019 and continuously innovates new raw materials and technologies to bring sustainable solutions to the market

### IDEAL CLIENT

SAF is a solution for airlines and the whole aviation industry to reduce direct carbon emissions of flying and driving the transition to sustainable aviation. Neste works with various partners across the value chain to enable wider use of SAF. Lufthansa, KLM and Finnair are e.g. using Neste's SAF.

### COMPANY

Neste is in the business of combating climate change and driving the transition to circular economy. We help transport and cities, as well as customers in aviation, polymers and chemicals sectors make their business more sustainable. In 2019, Neste's revenue stood at EUR 15.8 billion.

Sami Jauhainen

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# Soar with Safe, On-Time and Connected Journeys

**NOKIA**

## OUR SOLUTION

Airports digitalize to improve operational excellence and passenger experience, requiring reliable, secure wireless communication. They currently use technologies that often have service quality or coverage issues and do not meet digital airport needs. Nokia industrial-grade private 4.9/5G provides a purpose-built, secure wireless network that prioritizes operational traffic and provides guaranteed coverage and capacity, both terminal and air-side. Greater situational and operational awareness, and reliable connectivity enable more efficient aircraft turnaround processes and decision-making.

## COMPETITIVE ADVANTAGE

Nokia is a global leader in wireless communications, advanced analytics, and IoT. Our private wireless solutions have been deployed by over 150 enterprises, e.g. Helsinki Airport, Brussels Airport and Vienna International Airport. Also, MRO companies like Lufthansa Technik has met critical operational connectivity requirements with a dedicated 5G network built to handle the demands of digital aviation applications. Nokia Digital Automation Cloud is first of its kind plug-and-play solution, combining the technical superiority of 4.9/5G technology with easiness in deployment and operations.

## IDEAL CLIENT

Nokia industrial-grade 4.9/5G private wireless helps airports increase operational awareness and efficiency, enhance the passenger experience, improve airport sustainability, and even create new revenue streams. MRO companies can improve productivity, reduce costs, and maintain business continuity.

## COMPANY

Nokia creates the technology to connect the world, developing and delivering the industry's only end-to-end portfolio of network equipment, SW, services and licensing available globally. Our customers include enterprises that use our network portfolio to increase productivity and enrich lives.

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Thomas Rehberg

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# High-quality Aerial System Solutions for Professional Use

NORDIC  
DRONES

## OUR SOLUTION

We deliver aerial systems and integrated sensor solutions for industrial and municipal customers. We also offer operational training and assistance as well as maintenance and repair services. Our main area of expertise is solving the needs of our customers and helping to harness the advantages of drones. At the beginning of each project, we do a detailed survey of the specific demands and uses in order to offer first-rate service.

## COMPETITIVE ADVANTAGE

We offer drones designed and manufactured for their specific professional uses. Our drone pilot training and first-class features guarantee that our customers will be able to work efficiently and safely. Each drone is designed and manufactured entirely in Finland.

## IDEAL CLIENT

Not only have our Finnish drones flown locally, but also in the other Nordic countries, Europe and Asia. Our customers are innovative pioneers of their respective fields.

## COMPANY

Today Nordic Drones is the leading drone pilot trainer and manufacturer of drones designed for professional use. The drones manufactured entirely in Finland are customizable to fulfill the customer's needs.

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Pietari Sorri, CEO

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## Aircraft Manufacturing, Life Cycle Support and Flight Training

### OUR SOLUTION

Patria provides Life Cycle Support Services for aircraft and helicopters covering the airframe, engine and components, including mechanical and avionics equipment. Additional services are aerospace composites, avionics system design and integration, metal structures and assembly design and manufacturing, electronics part and device design and manufacturing, wiring harnesses design and manufacturing, radar and EW systems engineering, flight simulators and training devices, mission planning and debriefing systems, maintenance data gathering systems, and digitalised MRO processes.

### COMPETITIVE ADVANTAGE

Patria ensures customers are always ready for mission, whether operating on air, land or sea. Nearly 100 years of aviation experience has made Patria a constantly growing, world-class MRO and Modification services provider. As the Strategic Partner of the Finnish Defence Forces, we design and produce structural refurbishment programmes, avionic upgrades, light and heavy modifications and in-country developed solutions. We have a proven track record on cost efficient lead times of heavy maintenances. We provide short turnaround times with unparalleled expertise. Patria is the reliable partner.

### IDEAL CLIENT

Customers include OEMs, defence forces, civil authorities and companies globally.

### COMPANY

Patria is an international provider of defence, security and aviation life cycle support services, pilot training and technology solutions. Patria's mission is to give its customers confidence in all conditions, and the vision is to be the #1 partner for critical operations on land, sea and air.

Pasi Niinikoski

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## Power-to-Gas Energy Storage

### OUR SOLUTION

Q Power provides industrial customers with technologies for producing synthetic fuels, especially synthetic methane and syngas. Our Power-to-Gas solution can utilize CO<sub>2</sub> and H<sub>2</sub> from various sources as a feedstock for synthetic methane - the reaction operates with an unmatched process efficiency of 83 %. On the other hand, our gasification technology produces a highly pure, tar-free syngas, which can be used as such in methanation.

### COMPETITIVE ADVANTAGE

Our steady-state biological reactor design is highly efficient (83%), requires no pressurizing or mixing, and operates at temperate conditions. Our process requires no metal catalyze and is tolerant to impurities in feed gases.

### IDEAL CLIENT

Our solutions can serve a variety of customers. Ideally, fuel production capacity is built on a site with an existing source of carbon dioxide and/or hydrogen or renewable electricity. Suitable cases include ethanol production plants, biogas plants and landfills, among others.

### COMPANY

Q Power is an innovative provider of renewable energy solutions. Our widely patented technologies boast unmatched efficiencies.

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A NORDIC SOFTWARE HOUSE SPECIALISED IN AVIATION INDUSTRY SOLUTIONS

# Software Solutions for Aviation Industry



## OUR SOLUTION

Our solutions provide significant improvements to the industry's complex processes. They enable our customers to achieve more by doing less. Our solutions are:

- EngineData.io for intelligent integrations between different aviation industry operations.
- MROTools.io for tool management in aircraft maintenance.
- OpsMetrics.io for providing full transparency of operations to all stakeholders enabling effective exception-based decision making.
- Consulting services for unique needs in digitalisation, process improvement, data analytics, and more.

## COMPETITIVE ADVANTAGE

QOCO's industry solutions are designed with a proven and unique combination of highly-skilled software engineering and a deep understanding of airline/MRO maintenance processes. Management system compliant with ISO 9001 and ISO 27001 combined with modern agile processes enables rapid delivery from idea to implementation with high quality and information security.

## IDEAL CLIENT

Airlines, MROs, and OEMs who want to take the next steps in digital transformation with needs to implement paperless processes, automate recurring manual and semi-manual tasks, and improve data exchange for better analytics and decision-making.

## COMPANY

QOCO Systems Ltd., founded in 2009, is a software company focused on the aviation industry. QOCO Systems Ltd helps the aviation industry succeed in the changing world by creating new ways to work, communicate, and utilize data.

Markku Nyman, Managing Director

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# UAV Launching Systems



## OUR SOLUTION

Family of pneumatic technology solutions providing cost effective launching system for unmanned aircraft and aerial target drones. UAV test flight centre in Kemijärvi offering turn-key solution for UAS flight testing.

## COMPETITIVE ADVANTAGE

Robonic universal launcher concepts offer wide performance envelope (mass/speed), allowing operator to launch different UAV types using the same launcher. Key benefits of Robonic launchers are: one man operation, easy to use and maintain, high reliability, deployability, patented shock reducing system and low life-cycle cost. Launchers have been repeatedly proven in operational deployments globally.

## IDEAL CLIENT

UAS or Aerial Target manufacturer/system integrator developing a new air vehicle or in a need of catapult launching for an existing air vehicle. Armed Forces using tactical UAS and requiring runway independence. Aerial Target Service providers requiring high operative reliability and rapid relaunch capability. Any air vehicle manufacturer/operator needing air space and facilities for test flights.

## COMPANY

Robonic Ltd Oy is a premier global supplier of UAS launch systems. With its 35 years track record in launcher domain Robonic Ltd Oy has unique, unmatched experience in integrating different air vehicle types on its launchers. Wide customer base includes major front line UAV manufacturers and globally operating aerial target service providers.

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Markku Viitala, Managing Director

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# Unmanned Aviation Advisory Services



## OUR SOLUTION

Robots.expert is a consultancy and advisory company focusing on unmanned aviation. We help organizations in different segments discover the potential use of drones and guide them to deploy drone solutions. We have in-depth know-how that can help drone manufacturers and operators to comply with the new EU legislation and prepare SORA assessments for demanding BVLOS operations. We work with cities and regions to integrate Urban Air Mobility into the city structure and provide urban planning tools for UAM.

## COMPETITIVE ADVANTAGE

We work with international publicly funded multi-million Euros projects and nurture new competencies within these research and innovation projects. These competencies enable us to support our customers deploy world-leading drone solutions. By working with customers, we identify unique innovation needs to research in innovation projects. Our unique know-how in EU legislation, SORA, and U-space enable scalable drone usage world-wide.

## IDEAL CLIENT

Organizations in different sectors who are interested in discovering the potential of drones. UAV operators and manufacturers working with demanding drone operations. Cities and regions that are interested in discovering and implementing Urban Air Mobility.

## COMPANY

Experts to develop the future where drones benefit both business and society. We have offices in Finland and Germany, and projects across Europe.

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Tero Vuorenmaa, CEO

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<http://robots.expert>

## Aerostructure Components, Systems and Services

### OUR SOLUTION

RUAG Space electronics unit is focused on spacecraft electronics design, development, manufacturing and testing, offering turn-key equipment and sub-systems. RUAG Space Finland has participated in most of the recent ESA programs and operates also actively in the New Space segment.

### COMPETITIVE ADVANTAGE

RUAG Space Finland has participated in most of the recent ESA programs such as Biomass, JUICE, MetOp-SG, Jason-CS/Sentinel-6, Solar Orbiter, EarthCARE, Sentinel-2, Galileo, Gaia, Rosetta, CryoSat-1 and -2, and ADM-Aeolus as well as NASA's EOS-Aura mission. We have a 100% success rate in our space missions since 1985.

### IDEAL CLIENT

Satellite and spacecraft electronics manufacturer who needs high quality supplier with proven track record in delivering space electronics for both science mission and commercial needs.

### COMPANY

RUAG Space is the leading supplier of products for the space industry in Europe and has a growing presence in the United States as well. With 12 production sites in six countries, the division specializes in components for use aboard satellites and launch vehicles.



Timo Hänninen

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# Unmanned Drone Systems

## OUR SOLUTION

Our core competence is process automation through robotics and software development. Our services is automated area protection, border control, control of industrial sites and alarm task.

## COMPETITIVE ADVANTAGE

Our company has autonomous docking station. Our station is charging drones and collect or relay data to customer.

## IDEAL CLIENT

Our ideal client is somebody who needs are -live feeds from different places in the air - tracking unknown subject -different air measurements -different toxic measurements from air

## COMPANY

We are high-tech company from Imatra, Finland, founded in 2016.



# Situational Awareness for Professional Teams

# SAVOX

## OUR SOLUTION

Savox Communications provides various smart communication products and integrated information systems for various professional users and teams in the most demanding situations. Our dismantled and mobile solutions enable accurate situational awareness without compromises in critical operations. We are proud to help saving lives, protect people and property - enhance the efficiency and quality of work of professional teams around the world.

## BENEFITS FOR CUSTOMERS

Since the origins, Savox has built its all-round expertise and knowledge around the requirements of other professionals working in harsh and demanding, even hazardous, environments, intrinsically safe products being one of the specialities of the company. In addition to Savox® products, Savox's competence and skills in communication equipment has been utilised by other companies as Savox also provides R&D and manufacturing services for partners.

## COMPETITIVE ADVANTAGE

After almost 40 years of growth into a major player in the communications market, Savox is focused on creating reliable, state-of-the-art communication solutions for a wide range of professionals. Savox has a global presence and a recognised communications brand worldwide. The unique combination of in-house design, engineering and manufacturing facilities combined with drive for high quality makes Savox an attractive partner in the communications market.

## COMPANY

Savox Communications is one of the leading companies in critical communications and situational awareness areas. Though years our quality and innovation has paved the way for successful operations for professional users around the globe. Savox continues to grow and strengthen its portfolio of products and services. The focus is still on providing the best possible communication solutions to satisfied customers across the globe.

Sami Paihonen

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# Pioneers of Chromium Technology



## OUR SOLUTION

TripleHard® is a worldwide patented, industrially proven new generation hard chrome coating that is safe, inexpensive and higher performing than today's technologies. TripleHard® is a drop-in-replacement of toxic hexavalent chromium.

## COMPETITIVE ADVANTAGE

Because of the excellent wear, corrosion and acid resistance, TripleHard® is at its best at difficult and demanding environments, which means longer lifetime of parts and lower maintenance requirements. As a consequence, TripleHard® provides end users with significant savings.

## CUSTOMER BENEFITS

Thanks to its superior properties, TripleHard® can also replace thermal spraying, DLC, laser cladding or another special coatings, which are essentially more expensive technologies and may require heavier machining afterwards. TripleHard® process can be tailored to suit customer needs for instance in terms of hardness or layer thickness from a few micrometers to several hundred microns. Due to an excellent technical performance and high plating rate, TripleHard® means for end users increased production efficiency of the equipment and lower costs for the plating companies. It's easy to switch from hexavalent chromium to TripleHard®. The implementation does not require any additional investments as the existing plating infrastructure can be exploited.

## COMPANY

Savroc Ltd is the pioneer of the chromium technology. Savroc's technology center is located in Kuopio, Finland. The center is equipped with the latest technology for coating industry research & development.

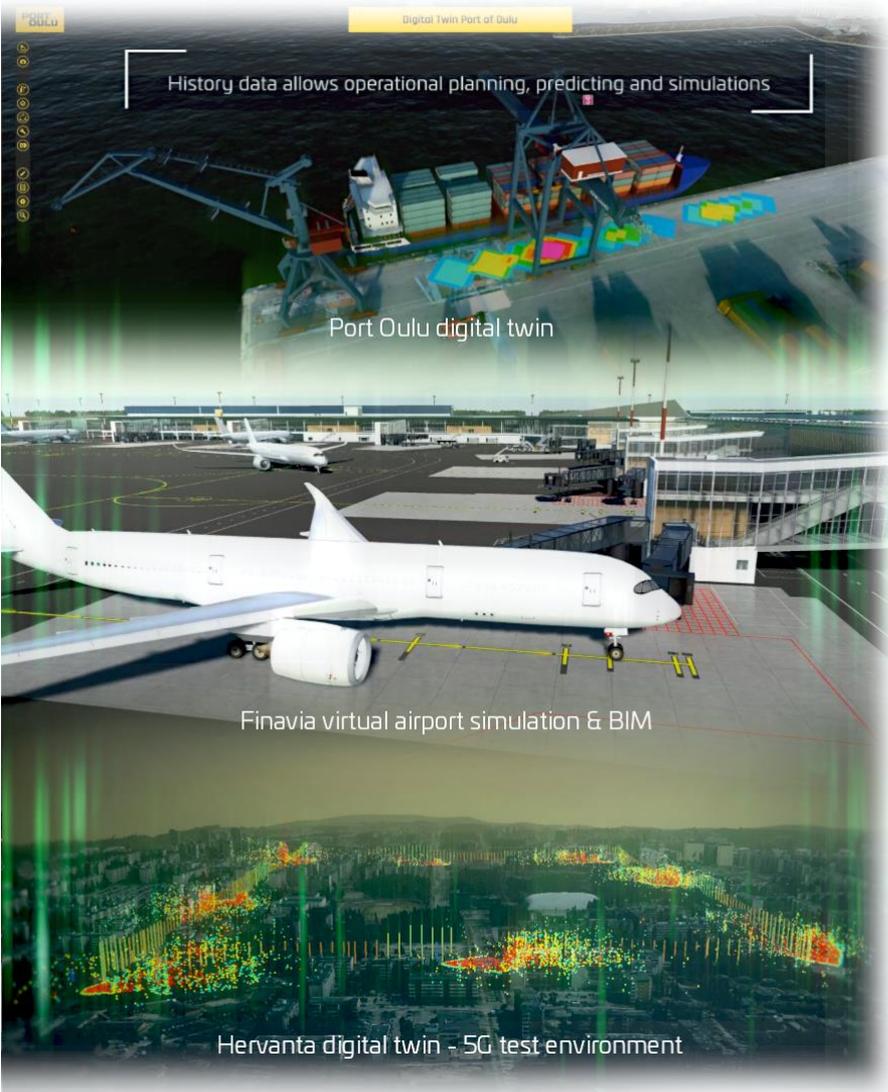
Savroc leads the chrome electroplating industry towards a cleaner, safer and more sustainable tomorrow.

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Osmo Jahkola, CEO

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History data allows operational planning, predicting and simulations

Port Oulu digital twin

Finavia virtual airport simulation & BIM

Hervanta digital twin - 5G test environment

# Building a Safe and Sustainable Environment

# SITOWISE

## OUR SOLUTION

Sitowise has extensive knowledge on infrastructure and construction planning, logistics and digital solutions in airport and other terminal environments. We promote data management and open data flows to boost data interoperability and high quality of construction. We create a digital landscape where virtual models, digital twins and location-based services enable cost efficient asset management and situational awareness. In addition, with our extensive knowledge on transport planning, emission calculations, traffic simulations, MaaS, CaaS and cargo logistics, we are changing the future of mobility.

## COMPETITIVE ADVANTAGE

Our expertise combines built environment and infrastructure planning with a vast knowledge on smart digital solutions and the latest technological revolutions such as digital twins, IoT and autonomous transport. With a deep understanding on 3D technology, open BIM and GIS, Sitowise is a pioneer in building information modelling in Finland. Our large software development unit is focused especially on the digital solutions for the built environment and mobility. Providing solutions for a more sustainable society and carbon neutrality, we aim to be the most sustainable actor in the AEC business.

## IDEAL CLIENT

Our solutions serve airports throughout their life cycle: from land use planning to infrastructure and construction planning, all the way to construction and maintenance. We have extensive knowledge on digital solutions for built environment and mobility, as well as security and defense sectors.

## COMPANY

Sitowise is a Nordic expert in the built environment with a strong focus on digitality. We design smart cities and spaces for living where daily life finds a sustainable foundation. We operate in three business areas: building design, infrastructure design and digital solutions.

Timo Karjalainen

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# Renewable Fuel Manufacturing & CO2 Capturing

## OUR SOLUTION

Soletair Power captures CO2 from building ventilation to make people more productive and wellbeing. Captured CO2 can be combined with hydrogen to create hydrocarbons ie. fuels. These fuels can be for example kerosine, diesel or methane. It is scientifically proven that every 400ppm increase in CO2 concentration will lower peoples cognitive function by 20%. This results in as a loss of thousands of euros per person per year if CO2 levels are high. This was the building can be as carbon sink. Soletair Power has the worlds first economically profitable power to x fuel production process.

## COMPETITIVE ADVANTAGE

Currently similar CO2 capturing solutions do not exist. Renewable fuel manufacturing from CO2 is just starting and there is not yet commercial activities in the world but they are coming.

## IDEAL CLIENT

Soletair Power solution is most ideal in office buildings. Service is for the occupants in the building. In the airports the CO2 lean air could be in the beginning available in the lounges and the fuel would be used in ground vehicles.

## COMPANY

Soletair Power is a startup based in Lappeenranta, Finland. Company was founded in 2016. 2019 Wärtsilä gave 0.5M€ seed funding for the company. Soletair Power sold it's first commercial unit in February 2020. Currently company employs 6 persons. Company is targeting high growth in global markets.



## Runway Weather Monitoring

### OUR SOLUTION

Teconer provides mobile runway monitoring systems to measure contaminant type, friction, water layer, surface and dew point temperature. All collected data is available on a map and in graphs, and can easily be integrated into other control systems.

### COMPETITIVE ADVANTAGE

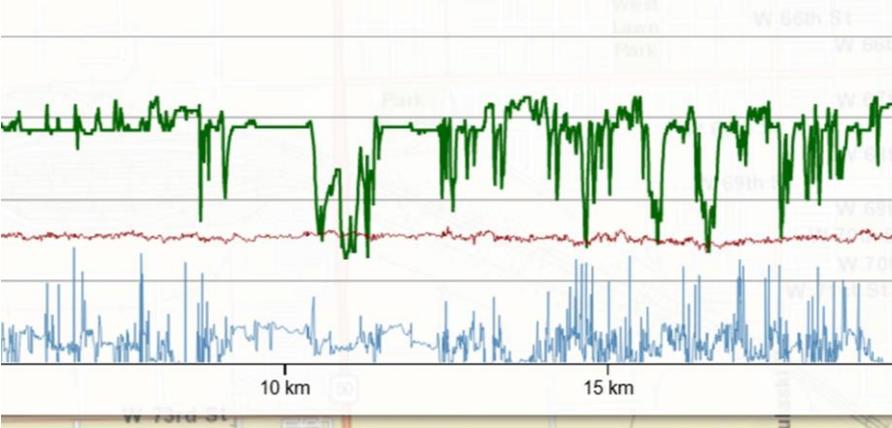
The performance and the design of the surface condition monitoring system have been optimized for mobile use. The sensor system is compact, has low life cycle costs and requires very little maintenance. Teconer is the pioneer in the field of mobile surface measurements.

### IDEAL CLIENT

The system assists airport winter maintenance operators in more efficient maintenance operations and optimized use of deicing chemicals. The airport may need to place fewer restrictions on flights and the forecasters can improve the forecasts by utilizing the data.

### COMPANY

Teconer develops, manufactures and markets environmental sensor systems and specializes in sophisticated optical measurement technology.



Leena Puhakka

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# Connectors, connection systems, tools and spareparts



## OUR SOLUTION

T&G Nordic Oy produces connection systems based on copper and fiber optics, from bottom of the sea up to the space and all in between. We also represent the leading manufacturers products widely used in aviation industry as well as assembling demanding industrial automation control cabins to customers in wide range of industries. We have highly skilled personnel in our group to serve our customers with the latest, advanced technology knowledge.

## COMPETITIVE ADVANTAGE

We can offer large complete solutions to the customers, starting from the support in the R&D process, components sourcing, manufacturing, testing and shipping the turnkey systems from one place.

## IDEAL CLIENT

Our customers are anyone who needs connection systems, copper cable harnesses, fiber cable harnesses, automation controlling systems, connectors, certain kind of tools used in aviation and components related.

## COMPANY

T&G Nordic Oy has three business areas;

- Defence and Security
- Industrial automation
- Components

All supported by Sales, R&D, production and services in house and cooperative partners. We have several tens of direct factory agreements securing the origin of components used.

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Kari Pekkala

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## Powertrain system supplier for manufacturers

### OUR SOLUTION

Toroidion is offering electric drivetrain propulsion solutions for aviation applications, replacing conventional powertrains with light weight and high torque direct drive electric motors. Toroidion system is operating at extra low voltage maximizing electrical safety in complete powertrain system.

### COMPETITIVE ADVANTAGE

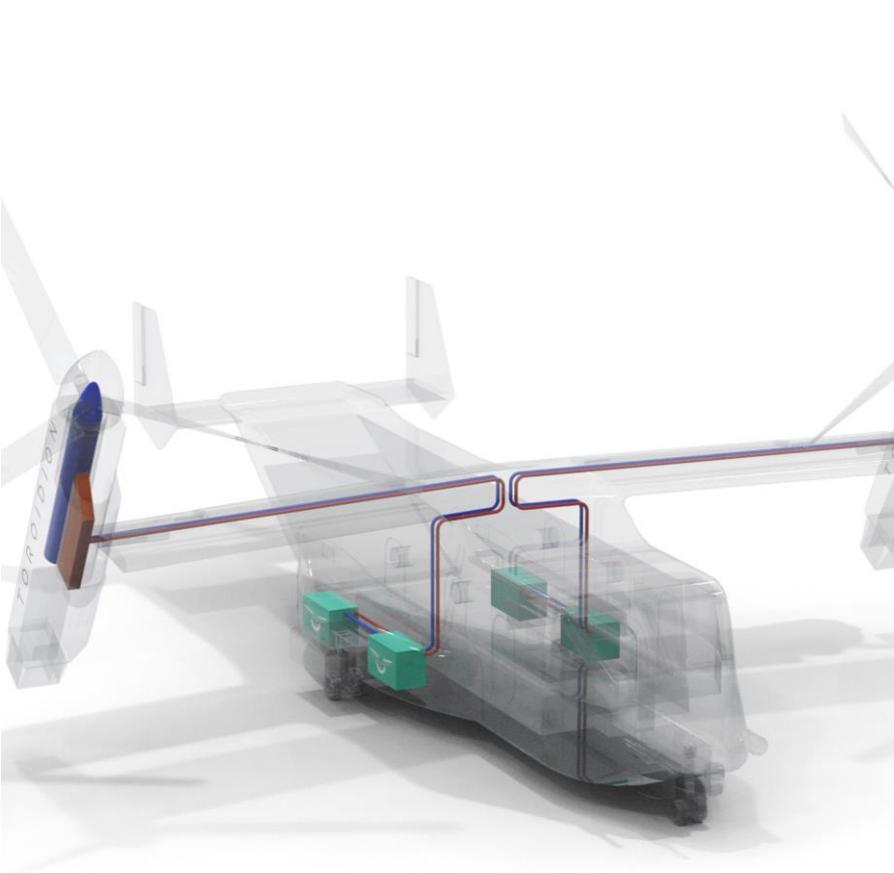
There is no other existing electric drivetrain solution which operates at Safety Extra Low Voltage (safe to touch) and can be scaled to any power requirement. Low operation cost, low noise and extremely high performance. Possibility to battery swap.

### IDEAL CLIENT

Aircraft manufacturer requiring electric powertrain solution which is practically maintenance free and superior in performance, yet electrically safe to operate and service.

### COMPANY

Toroidion Ltd has developed a new kind of electric motor with an innovative powertrain system suitable for automotive, marine, aerospace industries as well as industrial machinery. High performance Safety Extra Low Voltage powertrains that are light weight, high efficiency and emission free.





# Observations for a Better World

# VAISALA

## OUR SOLUTION

Vaisala has been serving the aviation industry with a focus on safety and efficiency for over 45 years. Today, Vaisala is the world leader in providing airport weather observing systems and solutions for sizes and types of airports in more than 160 countries. Our solutions range from Automated Weather Observing Systems and Runway Visual Range to weather radars, wind lidars and lightning detection networks. In addition to airport weather, we have solutions for runway condition assessment and reporting, pavement condition monitoring and are actively involved in drone weather solution development. Vaisala is trusted throughout the industry for our service, in-house application and systems expertise, project management, and ongoing support.

## COMPETITIVE ADVANTAGE

Unparalleled expertise in weather and environment. A technology company that is always innovating and believes in sustainability and science-based approaches. With over 45 years of experience in building airport specific weather solutions and an installed base of over 1000 systems in more than 160 countries, Vaisala has the exceptional level of professional competence needed to effectively manage the whole life-cycle of the airport weather solution, from the design, delivery, installation, training, maintenance and finally modernization phases. This experience extends from individual measurement instrumentation at the airport to the full aviation weather solution.

## IDEAL CLIENT

Any company whose mission it is to ensure safe and efficient aerodrome operations and who need accurate and reliable real-time weather or runway condition information without disruptions, even in the harshest conditions. Typical customers are airports and organizations operating at airports, but we also serving smaller scale airfields, including heliports and helipads.

## COMPANY

Vaisala is a global leader in environmental and industrial measurements. Building on over 80 years of experience, Vaisala provides its customers with reliable measurement solutions and services for better decision-making, safety, and efficiency. Vaisala is headquartered in Finland, and Vaisala's A-shares are listed on the Nasdaq Helsinki.

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Kari Luukkonen, Head of Aviation Weather

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## Aviation Groundcare Vehicles



### OUR SOLUTION

The special features of airport maintenance call for a specific vehicle. Safety issues, large working areas, long transits, need for a large fuel capacity, use of several implements and the comfort for workers - all of this can all be handled with a Valtra Unlimited tractor.

Valtra offers a range of proven solutions for international, regional and local airports. Whether they are maintenance tasks during the summer time or runway clearing operations in winter, Valtra has the capabilities to provide comprehensive solutions that get the job done.

### COMPETITIVE ADVANTAGE

What if there was one machine that can safely, conveniently, and quickly handle all the changing needs of airport maintenance? Tractors can easily replace trucks in airports due to their versatility and suitability for airport applications and the vast working area.

The build of a tractor is optimal in terms of visibility, comfort, ergonomics, and quality of work. The list of implements possible to fit on a tractor is nearly endless, and so is the list of tasks Valtra can handle.

### IDEAL CLIENT

Valtra tractors' ease of use means that they are the perfect fit for airport work. Simple and clear user interfaces means that any operator can get the best out of the machine. On top of that, when the runway doesn't need de-icing, the tractor can be used for other tasks.

### COMPANY

Valtra Inc. is the leading tractor manufacturer and service provider in Nordic. Valtra is manufacturing tractors and engines at our state-of-the-art plants in Finland. 1700 Valtra employees are working in a wide range of positions around the world. Valtra machines are sold in over 75 countries.

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<https://www.valtra.com/businesses-and-segments/aviation-groundcare.html>



# VR/XR Training Technology Provider

## OUR SOLUTION

Varjo creates the world's most advanced VR/XR products that can be used in training and simulation purposes where the trainee needs to see even the smallest visual details and be able to use physical controllers seamlessly together with virtual environments.

## COMPETITIVE ADVANTAGE

Varjo's VR/XR products are capable of producing human-eye resolution visual fidelity and provide also advanced hand- and eye-tracking capabilities. Hand tracking allows trainees to use their own hands instead of non-professional virtual reality controllers and eye-tracking enables to analyse everything that the trainee looked and or didn't look at during the training session. Further, our mixed reality product allows mixing physical controllers with virtual surroundings without the need for expensive cave systems.

## IDEAL CLIENT

Varjo's ideal clients are large commercial or governmental organisations looking for ways to achieve substantial cost and time savings through virtualising their pilot training. Our clients have usually tested other VR products but rejected them due to low visual resolution and overall quality.

## COMPANY

Varjo makes human-eye resolution virtual and mixed reality products that help professionals in the most demanding industries push the limits of what's ever been possible. We have currently around 120 employees and over 30 resellers worldwide. Our HQ is in Helsinki and US office in Washington D.C.

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## Our fields of expertise

- Aircraft structural integrity management
- Drone systems and applications
- Adaptive pilot training
- Transport electrification and clean hybridization
- Emission control
- Biofuels, batteries and fuel cells
- Ground and cargo operations
- Passenger experience and security

## beyond the obvious

### Aviation-related applied research R&D services

#### OUR SOLUTION

Our applied research is aimed at pre-commercial NextGen Proof-of-Concept piloting and emerging businesses. VTT supports various themes and technologies e.g. green aviation, structural integrity, unmanned aerial systems, cybersecure terrestrial – non-terrestrial communications and situational awareness, multiple airport operations and related process developments.

#### BENEFIT

- Ensuring business continuity and generating new business opportunities to our customers
- VTT can help the customers at all stages of their innovation process (ideas, proof-of-concepts, R&D, IPR, commercialization).

#### COMPETITIVE ADVANTAGE

- Novel R&D services covering a wide technology portfolio with medium TRL between academia (low TRL) and industries (high TRL).
- VTT-wide one shop stop customer service attitude with project management competence.
- Extensive research facilities with audited security facilities for classified research work.
- Substantial national and international networks, both academia and industries.
- Continuity via a part of the Finnish Government (we will not be sold to foreign investors).

#### COMPANY

VTT uses its R&D expertise to provide professional services for its domestic and international customers and partners serving both private and public sectors. We do applied research with advanced research facilities, having interdisciplinary scientific, technological, and business competences.

# THANK YOU!

To learn about the Global Innovation Partnership Program GIPP, please visit <https://www.businessfinland.fi/en/do-business-with-finland/explore-finland/gipp/>

For more information on Sustainable Manufacturing Program, please visit <https://www.businessfinland.fi/en/for-finnish-customers/services/programs/sustainable-manufacturing-finland/>



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